NORTHEAST MARKETING ISSUE
Pages 9-16

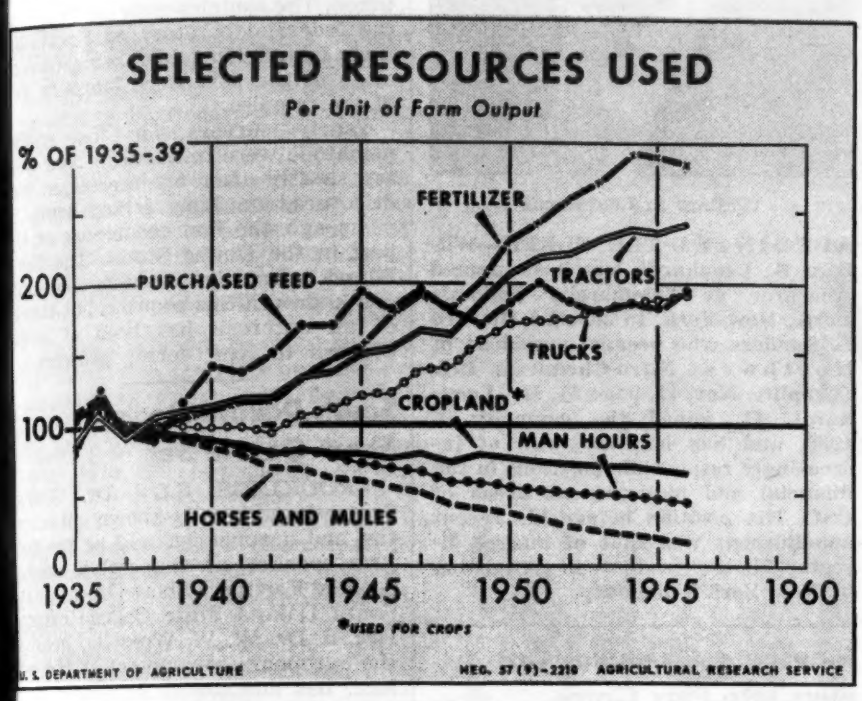
Croplife®

TOTAL CIRCULATION OVER 9,070 COPIES EACH WEEK
BPA Member, Business Publications Audit

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 4 | Accepted as Controlled Circulation Publication at Minneapolis, Minn. | NOVEMBER 25, 1957 | Subscription Rates: $5 for 1 year, $9 for 2 years | No. 47



GROWTH IN FERTILIZER CONSUMPTION—The increase in use of fertilizer is compared with the gain and loss in use of other farm resources in the above U.S. Department of Agriculture chart, which appeared in the Farm Cost Situation. USDA said the upturn in fertilizer use is expected to continue. "If the nutrient content of fertilizers continues to rise at the same rate as last year, fertilizer shipments as indicated by tag sales in states where information is available would indicate that consumption of plant nutrients for the year ending June 30, 1957 may have been about the same as that of the record year that ended in midsummer of 1955," USDA said.

GAIN OF ONLY 1% IN YEAR

Farm Cost Situation Points Up Slow Rise of Fertilizer Prices

WASHINGTON—The cost of fertilizer to farmers rose only about 1% in the year ended last Sept. 15, according to the Farm Cost Situation, released recently by the Agricultural Research Service, U.S. Department of Agriculture.

Except for seed, down 4%, and feed, down 5%, the fertilizer increase was the lowest in the USDA list of farmer production items. Other boosts in cost rates during the year ranged from 2% for motor supplies upwards to 18% for feeder cattle.

Further underscoring the fact that fertilizer is one of the farmers' biggest bargains today are these comments on the cost of raising corn in the cash grain belt:

"Since 1952 the prices of most of the items that enter into the cost of raising corn in this area have risen as follows: land values, 15%; interest rates on new farm mortgage loans, 20%; real estate taxes, 38%; farm machinery, 14%; gasoline, 4% and farm wage rates, 12%.

"However, the price of fertilizer, the most important item that farmers use to increase crop yields, has declined. This is especially true of nitrogen fertilizers. In Illinois the prices of anhydrous ammonia were 17% below the 1954 level in Mid-April."

USDA said that the increased use of fertilizer on the cash grain farms in the corn belt illustrates the type of adjustment that farmers are making to reduce costs and increase incomes.

"Here a farmer can expect to grow about 40 bu. corn to the acre without using fertilizer," the report states. "But under present conditions, with a yield this low his total cost per bushel might equal or even exceed the present price of corn.

"However, if he uses a little more seed and applies about $20 worth of fertilizer per acre, he can about double his yield in years when the weather is favorable. The cost of this additional output is approximately 60¢ bu., or about half the price of corn last spring."

Prices paid by farmers for straight nitrogen materials last September were about the same as those of last spring and slightly lower than those a year earlier, according to the cost report. Prices paid for principal phosphate and potash materials this fall are slightly higher than they were in the spring, when, in turn, they were a little higher than in both the spring and fall of 1956.

The September U.S. average price of 10 grades of mixed fertilizers, which represent about 45% of the total consumption of such fertilizers, was less than $1 a ton above the price a year earlier, USDA said.

Liquid Fertilizer Group Sets Sights on Future Growth of Industry

By HENRY S. FRENCH
Croplife Staff

CINCINNATI—The growing liquid fertilizer industry sowed the seeds for future expansion at the 1957 annual convention of the National Liquid Fertilizer Assn. held at the Netherland-Hilton Hotel in Cincinnati Nov. 17-19. The program was side-dressed with selling ideas, top-dressed with management hints, technical developments were plowed down, the material and supply outlook broadcast, and sessions were irrigated liberally by entertainment and social programs and during the open house in the suppliers' conference rooms.

In addition to the formal program, 25 of the major suppliers to the liquid fertilizer industry were provided conference rooms in which they could display their latest products or services. Conference rooms were open when the convention was not in session.

Close to 325 delegates registered for the meeting. During the business session, new officers and directors were elected.

Richard Cecil of Bartlett & O'Bryan Fertilizer Co., Owensboro, Ky., was named president of the association for the coming year. William B. Parrish of Auburn, Ill., is the new vice president; George H. Serviss of G.L.F. Exchange, Ithaca, N.Y., is secretary, and John L. Wilson, Semo Liquid Fertilizers, Inc., Charleston, Mo., treasurer.

These and the following constitute the board of directors: W. R. Bone, Monsanto Chemical Co., St. Louis; C. B. Coleman, Fabricated Metals, Inc., San Leandro, Cal.; E. E. Crouse, U.S. Liquid Fertilizer Co., Indianapolis, Ind.; Donald A. Fletcher, Pacific Supply Cooperative, Portland, Ore.; Donald Foster, Nitrogen Solutions, Ottawa, Ohio; Ernest M. Harper, Allied Chemical & Dye Corp., New York; Wayne R. Johnson, Johnson Brothers Mills, Shenandoah, Iowa; O. L. Ohnstad, Ohio Liquid Fertilizer, Inc., S. Solon, Ohio; W. Harold Schelm, Schelm Bros., Inc., E. Peoria, Ill.; Hugh S. Surles, Jr., Planters Cotton Oil & Fertilizer Co., Rocky Mt., N.C.; F. Todd Tremblay, Washington Cooperatives Farmers Assn., Seattle,

(Continued on page 20)

Project Set Up To Measure Results Of Georgia Program

WASHINGTON — A pilot project to test techniques and to evaluate the effectiveness of an intensified educational campaign to increase farm income through the more efficient use of fertilizer and lime has been launched by the Georgia Agricultural Extension Service in six counties in cooperation with the Georgia Plant Food Educational Society, the National Plant Food Institute, and many local agencies.

Announcement of the project was made by W. A. Sutton, Georgia ex-

(Continued on page 17)

Insect Resistance Real, But Not Always Poor Control Cause, Florida Group Told

MIAMI BEACH, FLA. — A symposium on "Vegetable Insect Resistance to Insecticides" was one of the program highlights at the 70th annual meeting of the Florida State Horticultural Society, held here recently.

Five speakers participated in the symposium, which was moderated by James E. Brogdon, extension entomologist, Florida Agricultural Extension Service.

Dale M. Norris, Jr., Potato Investigations Laboratory, Hastings, Fla., said that "insect resistance to insecticides is a phenomenon of genetic variation among inheritable traits which determine the toxic effects of various chemicals to insects. Therefore, the acceptance and employment of intraspecific genetic variation as the fundamental basis for such resistance development are necessary.

"Individuals of a species have demonstrated inherent ability to survive repeated chemical treatments which are lethal to the general species populations, and to give rise to resistant progeny. Such resistance has been carried through many descendant generations of the species. Thus, there is conclusive evidence that once a species population is repeatedly exposed to an insecticide, natural selection of tolerant individuals occurs and the trend, however slow, is towards a population dominated by tolerant individuals. Many factors character-

(Continued on page 21)

Inside You'll Find

Patents and Trademarks 7
World Report 8
Over the Counter 9
What's New 10
Weed of the Week 16
Editorials 22
Meeting Memos 23
Index of Advertisers 23

Gibberellic May Aid Sugar Beet Seed Production

WASHINGTON — Bolting-resistant varieties of sugar beets may become readily available to growers because U.S. Department of Agriculture and Colorado scientists have found growth-regulating gibberellic acid of possible use in commercial production of the seed. Seed of bolting-resistant beets cannot be grown by the commercial methods commonly used in the seed-producing areas of this country.

These non-bolting beet varieties were developed by plant breeders to solve a major sugar-beet industry problem—reduced yields of roots caused by the bolting of ordinary varieties grown in U.S. sugar-producing areas.

(Sugar beets are said to "bolt" when they cease leafy growth and rapidly send up a tall seed stalk. Easy-bolting plants tend to produce seed stalks in their first year of growth, which is undesirable from the standpoint of beet production.)

Recent experiments to induce seed production in non-bolting beets were made by J. O. Gaskill, USDA plant pathologist, with the cooperation of scientists of the Colorado Agricultural Experiment Station. These experiments demonstrated that gibberellic acid can substitute for part of the light and temperature treatments (photothermal induction) required to produce seeds in non-bolting kinds.

Using the acid treatment after 43 days of photothermal induction, the Federal-State researchers at Fort Collins, Colo., were able to produce viable seed of non-bolting varieties in approximately 25 weeks. The researchers found that seed could not be produced by either gibberellic acid or the 43-day photothermal treatment used alone. In the tests, four applications of the acid were made to the plant leaves. Dosage for each treatment was 1 part acid per 1,000 parts water.

Of importance to seed producers is the finding that gibberellic acid and 43 days of photothermal induction in combination virtually eliminate need for the additional cool period required for seed development in bolting-resistant beets.

Seed of ordinary sugar-beet varieties is produced economically in this country in areas of Arizona, Oregon, southern Utah and southern California where cool weather and daylight are adequate. In these locations, beets for seed remain in the ground over winter without danger of freezing. Over-wintered plants produce seed the following year. The seed is harvested by combine.

The Fort Collins experiments indicate gibberellic acid can take the place of a part of the thermal condition (cool temperature) needed to induce bolting in bolting-resistant beets. The success and economy of this treatment under field conditions, however, are yet to be established. Field studies will show whether seed of non-bolting beets can be produced commercially without resorting to Old World methods that would make cost of this seed prohibitive.

North Carolina Tonnage

RALEIGH, N.C. — North Carolina fertilizer shipments during September totaled 34,293 tons, a gain from 31,272 tons in September last year. Shipments during the first quarter of this fiscal year (July-September) amounted to 72,305 tons, compared with 67,264 tons during a corresponding period a year ago.

ILLINOIS MEETING

URBANA, ILL.—The 1958 Illinois Fertilizer Industry Conference will be held at the University of Illinois here Jan. 21-22.

Malcolm Rice Named Agronomist for CFA Soil Committee

SAN MARINO, CAL. — Malcolm Rice has been appointed, as of Nov. 15, to the new position of agronomist of the Soil Improvement Committee, California Fertilizer Assn., it was announced Nov. 18 by M. E. McCollam, committee chairman.

Mr. Rice, 30, will make his home in the San Marino area, and will make his headquarters at the association office in San Marino. He will concentrate on the program of the committee, which includes the publication and distribution of the Western Fertilizer Handbook; special booklets; slide films and other visual aids; the motion picture "California Grows With Fertilizer"; liaison with the University of California in connection with the committee's annual grants-in-aid for specific fertilizer research and in connection with all other joint activity; the four annual scholarships to students of California Polytechnic College; on the program of the annual California Fertilizer Conference; forest fertilization research; cooperation with the Southern California Turfgrass Council; the workshop and other programs for advancing information of fertilizer salesmen and dealers; the annual fertilizer essay contest; and dissemination to the public of proper information concerning the use of fertilizers. He will also work with the committee on any new program which may develop.

Mr. Rice took his B.A. degree in animal husbandry from the University of California at Davis in June of this year, with majors in agronomy and in soils. He was raised in rural San Diego County and during the last several months has served as agronomist for one of the larger farming operations in the San Joaquin Valley.

Mr. McCollam said that with the appointment of Mr. Rice as the committee's agronomist, its work will go forward with increasing effect. He pointed out that the aims and purposes of the association and of the committee are "to promote the progress and development of the fertilizer industry in the interest of a sound agriculture, and more specifically, to procure and disseminate useful knowledge and information among the members of the association and others interested in agriculture, or in the utilization of fertilizer, which would pertain to the scientific development of agriculture and to the increase of soil fertility; to encourage agricultural study and research in schools and colleges, and efficiency in the commercial fertilizer industry; and to promote social and business intercourse among all persons interested in the improvement of the soil and the production of fertilizers."

Iowa Dealer Meeting Planned for Dec. 4

AMES, IOWA—The tenth annual Fertilizer Dealers' Short Course will be presented at Iowa State College Dec. 4.

Morning, afternoon and evening sessions are scheduled. Program presentations will be designed to bring dealers up to date on latest practices and recommendations for fertilizer use, according to Joe Stritzel, Iowa State College agronomist. In addition to discussions by college crops and soils specialists, a question and answer session—popular with dealers in past years—has again been planned.

ALBERT THAYER DIES

SACRAMENTO — Albert Austin Thayer, 64, an agricultural aircraft sowing and dusting service operator of the Grimes district in eastern Colusa County, died recently of a heart attack.

William S. Leonhardt

APPOINTED TREASURER—William S. Leonhardt has been named treasurer of Commercial Solvents Corp., New York, to succeed Howard L. Sanders who became president of Northwest Nitro-Chemicals, Ltd. (Croplife, Nov. 11, page 5). Mr. Leonhardt, 41, joined the company in 1939, and has held a series of increasingly responsible positions in the financial and management areas of CSC. His position before his recent appointment was that of budget director. He is a graduate in accounting of New York University.

Monsanto Chemical Co. Buys Into Plax Corp.

ST. LOUIS — Monsanto Chemical Co. has become owner of 50% of the voting and issued stock of Plax Corp., Bloomfield, Conn., by purchase of the 250,000 Plax shares formerly owned by Owens-Illinois Glass Co., in exchange for 325,000 shares of Monsanto common stock, according to an agreement approved by the respective board of directors. Owens-Illinois is acquiring these Monsanto shares as an investment and not with a view to their distribution or resale.

Plax—with plants at Stonington and Deep River, Conn., and Ligonier, Ind.—manufactures and sells blown plastic products, including bottles made from polyethylene and other resins, as well as film and sheeting made from polyethylene, polystyrene and other plastic materials. The other 50% of Plax shares will continue to be owned by Emhart Manufacturing Co., which originally fostered the creation of Plax. Owens-Illinois purchased its shares in Plax for $8,000,000 in September, 1953.

E. R. Jackman Gets Farm Bureau Honor

PORTLAND, ORE.—E. R. Jackman, Oregon State College range crop management specialist and one of the better known extension service veterans, was awarded Oregon Farm Bureau Federation's distinguished service award at the organization's recent 26th annual meeting at Eugene.

Early in his long career, Mr. Jackman set a goal of legume for every acre in the state and his ensuing work has meant millions of dollars in building Oregon farm land.

In 1930 to 1945, Mr. Jackman began a drive to interest farmers in a new type of crop management based on growing varieties of grass seed by counties rather than varieties across the state. The value of such a program was evident to farmers and has proved very successful both in production and marketing.

Mr. Jackman has received national recognition for new techniques in crop management. He was among the first to promote the growing of grass in rows with high fertilization for better yields. He has long been interested in seed certification.

No Golden Nematode Found in Annual New Jersey Survey

TRENTON, N.J.—The tenth annual New Jersey survey for the golden nematode has revealed no trace of the pest in the state, William M. Boyd, chief of the Bureau of Entomology, New Jersey Department of Agriculture, reports.

The intensive survey, conducted by the State and Federal departments of agriculture, covered 11 counties. About 2,000 samples, consisting of soil from potato fields and debris collected around potato graders, were taken. The samples were processed at the federal laboratory at Hicksville, Long Island. No golden nematodes or cysts of the pest were found in any of the samples.

Yearly surveys for the golden nematode were initiated in New Jersey shortly after an infestation was discovered on Long Island some 10 years ago, the first occurrence of the pest in the United States. The Long Island infestation remains the only one known in this country, but threat of an outbreak has been of great concern to New Jersey growers.

South Dakota Dealer Short Course Set

BROOKINGS, S.D. — Dr. George Scarseth, nationally-known soil scientist and agronomist, will be the feature speaker at the eighth annual dealers' Fertilizer Short Course at the South Dakota State College campus Dec. 6, Dr. W. W. Worzella, head of the agronomy department at the college, has announced. Fertilizer dealers from South Dakota and surrounding area will attend the program slated to start at 9:30 a.m. in the Pugsley Union Bunny Ballroom.

Dr. Scarseth, director of research for the American Farm Research association at Lafayette, was formerly head of the agronomy department at Purdue University. He has also served on the teaching and research staffs of the Alabama, Connecticut, and Wisconsin agricultural experiment stations. Title of Dr. Scarseth's address is "The Gold I See in Your Plains."

Other speakers on the program are Vincent Dunn, ASC, Huron; Glen Ritterbusch, Commercial Trust and Savings Bank, Mitchell; and L. F. Puhr, L. O. Fine, B. L. Brage, and F. E. Shubeck of the agronomy department at South Dakota State College.

Soil and moisture aspects of fertilization and reports on studies and usage in South Dakota will be covered in the talks. Fertilizer trends and outlooks will also be discussed.

Dr. Worzella will preside at the morning session and Marlo Scharf of the Crest Chemical Co. at Watertown will preside at the afternoon session. Dr. Max Myers, Agricultural Experiment Station director, will open the meeting with an address of welcome.

Bird Repellent Tests Show Promise

LUBBOCK, TEXAS—A new chemical bird repellent compound to protect grain fields has been successful on test plots at the Lubbock Experiment Station.

Dr. Nicholas W. Kramer, sorghum breeder at the station, says the tests are promising. Five different materials have been used, with each being put out in August on white grain sorghum. The material was applied at two different rates.

Some of the compounds kept birds from pecking the grain heads, and kept down damage in adjoining fields. Another benefit from the repellent was that the grain was apparently protected from mold.

The compounds are not yet on the market, said Dr. Kramer, but will probably be available to farmers before the station has finished testing them.

Plant Foods Will Revive Worn-Out Soils, Test Findings at Morrow Plots Show

URBANA, ILL.—A plot of land growing corn continuously for 82 years on the University of Illinois Morrow Plots produced a yield of 121 bu. an acre in 1957. This soil had received a manure-lime-phosphate treatment since 1904 with extra nitrogen, potash and phosphate in 1955, 1956 and 1957.

Perhaps even more startling and significant were the results on another plot that yielded 106 bu. an acre. This land had also grown corn for 82 years but had received no plant food treatment until 1955. For the past three years it has received lime, nitrogen, phosphate and potash. For the three years just before the plant food treatment, yields averaged only 23 bu. to the acre.

Results show that on these plots growing corn continuously for many years the low yields were caused by loss of plant nutrients, not by physical condition of this soil, the Illinois agronomists point out.

Physical changes have taken place in the soils on the plots growing continuous corn. For example, only about half as much organic matter remains in these plots as in those that have been in a corn-oats-clover rotation. But these changes in physical condition have not had a major effect on yields when enough plant food has been supplied.

Actually, two of the three parts of the morrow plots were growing corn this year. One part was the continuous corn section, and the other was the corn-oats rotation.

Corn grown in a corn-oats rotation since 1876 with no plant food treatment yielded only 48 bu. an acre. On the plots receiving plant food treatments, yields ran from 125 to 133 bu. an acre. This part of the Morrow Plots also shows that plant food treatments will revive soils depleted by continuous cropping.

The startling recovery in yields made on the Morrow Plots can't be expected on all kinds of soils, say the Illinois agronomists. A soil with good natural physical qualities such as is found in central Illinois can be expected to recover in much the same way as the Morrow Plots. But there are many worn-out soils in Illinois that can't be similarly rejuvenated with heavy plant food applications.

The initial fertilizer application in 1955 was 5 tons of lime, 200 lb. of nitrogen, 150 lb. of phosphate (P_2O_5) and 150 lb. of potash. In 1956 and 1957, 200 lb. of nitrogen, 40 lb. of phosphate and 30 lb. of potash an acre were added each year. These applications were designed to completely remove plant-food deficiencies.

Adding more fertilizers to soils that have received regular plant food treatments for 50 years has given limited response on the Morrow Plots. The yield increases are not as large as the spectacular results obtained when fertilizers have been applied to soils worn out by 80 years of continuous cropping without soil treatment.

For example, on the continuous corn plot receiving a manure-lime-phosphate treatment since 1904, corn yielded 91 bu. an acre in 1957. Adding a mixed fertilizer of 200 lb. of nitrogen, 40 lb. of phosphate and 30 lb. of potash an acre to this plot of relatively high fertility produced a yield of 121 bu.

Soils in corn-oats rotation plots responded less to fertilizer. Here the plot that had received no treatment since 1876 produced a corn yield of 48 bu. The plot receiving a manure-lime-phosphate treatment since 1904 yielded 133 bu. The plot where fertilizer had been added to this MLP treatment yielded 126 bu. this year.

However, the Illinois agronomists stressed that it should not be concluded that fertilizer cuts yields or is not needed. What is to be learned from these results is this: The response to adding more fertilizer will not be as great on highly fertile soils where a good rotation has been used along with soil treatments over the years as on poorer soils.

Soil treatments of manure-lime-phosphate were set up on the Morrow Plots in 1904 when the agronomists could see that continuous cropping was depleting the soil. These treatments were not changed until 1955. In that year, fertilizer treatments of nitrogen, phosphate and potash were added to previously untreated plots and to the plots receiving the MLP treatment.

Since corn is planted only every other year in the corn-oats rotation and every third year in the corn-oats-clover section, several more years of cropping will show a more complete picture of additional plant food treatments on these more fertile sections of the Morrow Plots.

Planting four kernels of corn to the hill instead of three won't mean a bigger corn yield unless there is enough plant food in the soil to produce the extra corn. This fact is proved on the Morrow Plots.

Where corn has been grown every year since the plots began in 1876, with no soil treatment, yield in 1956 was 29 bu. an acre. The agronomists planted three kernels of corn to the hill just as they had done for many years. This is equal to 12,000 plants an acre.

In 1957, on these same plots, they planted two kernels to the hill, or about 8,000 plants an acre. Yields jumped to 42 bu. an acre. The only differences between the two years were plant population and weather. And weather was considered to be better for corn in 1956 than in 1957.

The agronomists explain that, with low fertility in these continuous corn plots, the smaller plant population gave each plant more room and the chance to develop bigger ears. This more than made up for the fewer plants.

On the other hand, when fertility is high, plant population also must be high to get top yields. Here's what research results show: On the corn-oats rotation, the plot receiving manure - lime - phosphate treatment was divided. Three kernels per hill were planted on one part so that there were about 12,000 plants an acre. The other part received four kernels per hill, or about 16,000 plants an acre.

The lower population plot made 114 bu. an acre. The high population plot made 133 bu. Soil treatments were the same. The only difference was plant population.

So research on the Morrow Plots shows that, to get top corn yields, high fertility and high plant population must go together.

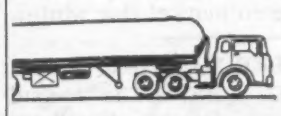
New from Sohio

the solution for granular fertilizers

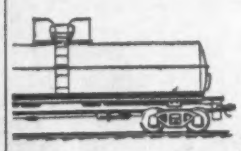
SOHIOGEN 16

(41.4% nitrogen)

saves up to $1.00 per ton in materials and manufacture



Sohiogen 16 . . . another pace-setting Sohio solution, developed by research, to match the fast changing scene in the fertilizer industry. And it's yours with a long list of benefits for granular manufacture . . .



- ★ **High fixed-to-free ratio — you can use more solution without over-ammoniation . . . require less acid neutralization.**
- ★ **Low salting out temperature — Sohiogen 16 is easier to handle and work with. Reduces storage problems. Low vapor pressure, too.**
- ★ **Produces hard granules — one size for ideal drillability, good storage. Minimum recycle ratio.**
- ★ **High nitrogen, low water content — reduces shipping costs, drying costs of finished goods.**
- ★ **Free-flowing, conditioned granules — result from perfectly adjusted Urea-Nitrate balance. Permits high solution usage with low moisture absorption of finished product.**

Sohiogen 16 has been tried and proved in full-scale, multi-plant manufacturing operations. Extensive tests show it can supply all of the nitrogen for granular fertilizers up to 12% — in some instances up to 15%.

For complete details call the "Man from Sohio" . . . see how new Sohiogen 16 can make money for you.

. . . we're serious about SERVICE at Sohio

SOHIO CHEMICAL COMPANY

FT. AMANDA RD. • P. O. BOX 628 • LIMA, OHIO

INSECT AND PLANT DISEASE NOTES

Spittlebug on Increase in Ohio, Entomologist Says

COLUMBUS, OHIO — Come next spring spittlebugs could well be a serious problem in meadows and hay fields of Ohio.

The population of spittlebugs has increased throughout the state over that of a year ago, according to D. Lyle Goleman. The Ohio State University extension entomologist bases this comment on results of a fall spittlebug survey conducted in Ohio by the agricultural extension service in cooperation with the agricultural experiment station.

Heaviest spittlebug population, Mr. Goleman says, appears in a band stretching across the state from northeast to southwest. Fields in central Ohio are most heavily infested.

In each area checked, according to the entomologist, there were fields with heavy infestations and some with light infestations. The pattern of infestation, he says, is about the same as that of last year, although, in general, the population has increased in every area except north central Ohio, where it remains about the same.

Spittlebug populations are counted by taking sample sweeps in a field with a bug net. In central Ohio this fall bugs numbered 7.46 for each sweep, compared to 1.48 per sweep last year and 0.98 per sweep in 1955.

One bug per sweep, Mr. Goleman says, indicates a population which warrants field treatment the following spring. Although freezing weather kills the bugs in the fall their eggs go through the winter unharmed and hatch the following spring. Then is the time to treat fields.

South Dakota Has High Corn Borer Count

WASHINGTON — The percentage of infestation and counts of the European corn borer in South Dakota during the fall survey are the highest since 1954, according to the current issue of the Cooperative Economic Insect Report, issued by the U.S. Department of Agriculture.

The average of 235 fields surveyed during the fall was 79% infested with 339 borers per 100 plants.

In Nebraska the average number of borers per 100 plants in nine counties in the Platte Valley district is 106.45. Average infestation is 47.61%.

Corn borer populations in Illinois during the fall survey ranged from non-economic in southern and eastern areas to light in the northern area and moderate in western and central areas. Counts were as high as 244 and 271 per 100 stalks in Hancock and Jersey counties. Lower counts were generally present in moderate area.

Corn Borer Found in 5 Louisiana Parishes

BATON ROUGE, LA. — European corn borers were found in five northeast Louisiana parishes in 1957, the first year in history that the pest has been discovered in the state. Farmers have been urged to report suspected infestation during the 1958 season to their county agent for identification and for advice on control of the insects.

Fire Ant Found in New Florida Counties

GAINESVILLE, FLA. — The imported fire ant has been found for the first time in two Florida counties, according to J. C. Denmark, collaborator, Florida Insect Survey Report.

First finding of the pest in Pasco County was reported three miles north of the Hillsborough County line, one mile west of U.S. Highway 41.

The fire ant in the adult stage was collected at Panama City, Bay County. Another finding, averaging hundreds per can in hibiscus egg can, was reported at Miami, for the first reported find in Dade County.

Seed-Borne Diseases Pose Threat in S.C.

CLEMSON, S.C.—The cotton seed germination problem is acute as is the problem of seed-borne diseases. Past surveys indicate that during a rainy fall season Anthracnose fungus is carried over on the seed and is expected to be unusually great.

Under such conditions seed treatment is a must. It is hoped that 100% treatment next season of cotton seed is achieved. Adequate and recommended amounts of fungicides are advised.

Aphid collected from oats at Anderson and the green bug collected in Barnwell are capable of transmitting a virus of cereal called "yellow-dwarf."

Nematodes are a problem in milo and their presence is reported in Colleton County.

One report indicates that soils examined where coastal bermuda grass was dying early last month indicate quite a bit of variation. In most all cases the soluble calcium was "fair" to "poor" which might have had as much bearing as the phosphorus or potash on the occurrence. In one case there were more white grubs in the dying areas than where the grass was good.

Ezra Taft Benson Denies Intention Of Resigning Post

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—Ezra Taft Benson, secretary of agriculture, has denied that he intends to resign his cabinet post. Moreover, he has had no indication from the White House that his period of usefulness has ended. Mr. Benson made these facts known on his return from visiting Far, Middle Eastern and European countries to explore the possibilities of expanding the sale of U.S. agricultural surpluses.

However, the climate here and on the farm front has not improved and there is nothing on the horizon to show that it will. General conditions for farm prices, now that harvesting is underway in the corn belt, are poor, a further factor in weakening Mr. Benson's position.

There is nothing appearing in the offing which either Mr. Benson or his successors can offer to alter the farm outlook unless USDA comes forward with some further use of funds, such as credits to farmers who might dry down extremely wet corn from the new crop to make it eligible for loan purposes. That possibility might encourage farmers to hold back their corn through use of the loan program or purchase agreements to such an extent as to prevent any serious break in the corn market this winter.

DEALER MEETING

PORTLAND, ORE. — The second annual Western Oregon Fertilizer Dealers' day will be held at the Oregon State college campus, Corvallis, Jan. 22,

1,000 Expected At Anhydrous Institute Sessions

LITTLE ROCK — The 7th annual national convention and trade show of the Agricultural Ammonia Institute here Dec. 11-13 is expected to attract about 1,000 leaders of the agricultural chemical industry.

Jack F. Criswell, executive vice president of the Institute, with offices in Memphis, said three major speeches would combine with an intensive program of forum discussions of agricultural problems and several tours of scenic and historic spots for wives of delegates for an "unusual convention program."

Convention headquarters will be Hotel Marion. The trade show and forum discussions will be at the Joseph T. Robinson Memorial Auditorium. The speakers are C. Hamilton Moses, Little Rock attorney and former president of Arkansas Power & Light Co.; Dr. George S. Benson, president of Harding College at Searcy and a nationally-known writer and speaker; and Chester H. Lauck, native of Allene, Ark., who is better known as the "Lum" of the "Lum 'n' Abner" radio and motion picture team and who is now executive assistant of Continental Oil Co. in Houston, Texas.

Texas Fertilizer Sales Show 5% Increase

COLLEGE STATION, TEXAS — Sales of fertilizers and fertilizer materials in Texas during the fertilizer year beginning July 1, 1956, amounted to 595,175 tons, a 5% increase over the tonnage sold during the preceding year.

Sales of mixed goods decreased 4%, while sales of materials increased 14%. Grades of the 1-2-1 ratio accounted for 69%, and the 1-1-1 ratio for 10% of the total 270,086 tons of mixed goods sold. Nitrogenous materials accounted for 49%, superphosphates for 23% and ammoniated phosphates for 23% of the total 324,089 tons of materials sold.

HEADS MINING GROUP

SANTA FE, N.M.—Russell Haworth, vice president of the Potash Company of America, Carlsbad, has been elected president of the New Mexico Mining Assn.

AT MISSISSIPPI MEETING—The advisory committee of the Mississippi Fertilizer Industry is shown at the left above during the annual convention held at Biloxi (see page 4 of the Nov. 18 issue of Croplife). From left to right are J. T. Caldwell, Virginia-Carolina Chemical Corp., Jackson, Miss.; Charles McNeil, Mississippi Federated Cooperatives, Jackson, Miss.; Si Corley, commissioner of agriculture, Jackson, Miss.; James E. Young, International Minerals and Chemical Corp., Tupelo, Miss., and M. G. Fields, Meridian Fertilizer Factory, Hattiesburg, Miss. Speakers at the meeting are shown at the right. They are Frank Boyd, Virginia-Carolina Chemical Corp., Montgomery, Ala.; Paul T. Truitt, executive vice president, National Plant Food Institute, Washington, D.C.; Mr. Corley, and Dr. W. L. Giles, Delta Branch Experiment Station, Stoneville, Miss.

Nitrogen Consumption Grows In U.S., Europe but Dips in Far East, Aikman Report Says

LONDON — Nitrogen consumption is still on the increase in Europe, Egypt and the U.S., but has not been up to expectations in parts of the Far East, notably China, India and Pakistan, according to the annual report on the nitrogen industry issued by Aikman (London) Ltd.

The rate of increase in nitrogen use has slowed during the past year in Europe, Egypt and the U.S., but the firm said it believed that the rate would increase again in the near future.

The lower-than-expected consumption in the Far East countries is due to poor crops during the last harvest, Aikman said. "Exports have consequently been reduced and the foreign exchange available for new imports of nitrogen and other fertilizers has lessened," the report stated.

"It is obvious, however, that with the increasing population in all these countries, this can be only a temporary set-back, as without the requisite amount of fertilizers, they will be unable to feed their people."

The report stated that production in the U.S. has been reduced because of "the impossibility of disposing of their large capacity, and this is likely to go on for several years.

"Another factor which has played its part in reducing production is the fact that prices were no longer at an economic level . . ."

At the end of this fiscal year it is expected that the synthetic nitrogen capacity in the U.S. will be about 3,650,000 metric tons, or 3,825,000 metric tons if by-product is included, the report stated. Total production for 1957-58 is unlikely to exceed 2,900,000 metric tons in all, it said. Consumption in the U.S. during this same period is estimated at 2,900,000 metric tons, of which 900,000 metric tons will be for industrial and military purposes.

Production of synthetic nitrogen, especially urea, is increasing in Japan, Aikman said. The total for the year ended last June was estimated at 745,000 tons of nitrogen, and consumption, including that by industry, was estimated at 640,000 tons, leaving 105,000 tons available for export. For 1957-58 Japanese production is estimated at 860,000 tons and consumption at 660,000 tons, so that exports might be 200,000 tons. Output in 1958-59 is estimated at 880,000 tons, and consumption at 680,000 tons with 200,000 tons for export.

Production capacity for synthetic nitrogen has increased in Europe and a big surplus is certain during the next few years unless production is further curtailed by agreement, according to the report. Normally a great deal of this would go to the Far East, but Aikman said that it is unlikely that these markets in the near future can absorb the surplus, with increasing competition from the U.S. and Japan.

The report stated that the aftermath of the Suez crisis has resulted in a substantial drop in freights from Europe to the East, but, because of the lack of money, this has not resulted in many new purchases. It merely is enabling the purchases made in advance to be gradually liquidated.

Consumption of synthetic nitrogen for industry "is rapidly increasing in all countries and may prove to be a major solution in disposing of the present surplus capacity," Aikman said.

The report estimated the synthetic nitrogen production capacity of the U.S. for the fiscal year ended June 30, 1959 at 3,100,000 metric tons, with production there at 1,000,000 metric tons for 1956-57, with consumption higher than that figure because of imports from East Germany, Aikman said.

Production up to last June 30 of Chilean nitrate amounted only to 185,000 metric tons of nitrogen because of strikes, and output for the current year is estimated at a slightly higher figure, according to the report.

"The strikes are over, but on the other hand, increasing costs have decided most of the shanks producers to close down, and practically the total production is now being made at the mechanized plants of Maria Elena, Pedro Valdivia and Victoria," the report stated. "Costs have increased and profits for the current year probably will be negligible, but with the large expenditure on increasing plants it is expected in a year's time that costs will again be normal and that there will be considerable profits on potash nitrate and other by-products during the next few years."

ESTIMATED NITROGEN PRODUCTION AND CONSUMPTION
Year Ended June 30; in Thousands of Metric Tons

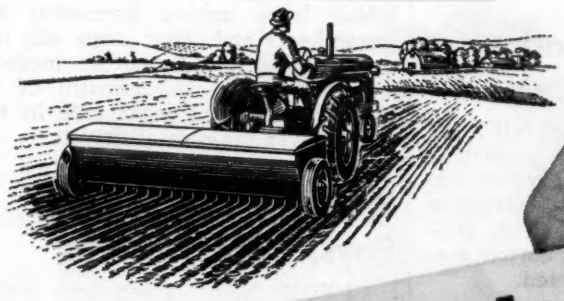
	—1955-56—		—1956-57—		—1957-58—		—1958-59—	
	Prod.	Con.	Prod.	Con.	Prod.	Con.	Prod.	Con.
Europe and Egypt	3,855	3,315	4,210	3,585	4,680	3,815	5,095	4,040
U.S.A.	2,700	2,600	2,750	2,750	2,900	2,900	3,100	3,100
Canada and the rest of America	517	237	475	289	540	320	550	350
Asia	925	1,286	990	1,445	1,160	1,550	1,325	1,640
Other countries*	88	217	100	261	120	320	120	370
Total	8,085	7,655	8,525	8,330	9,400	8,905	10,190	9,500

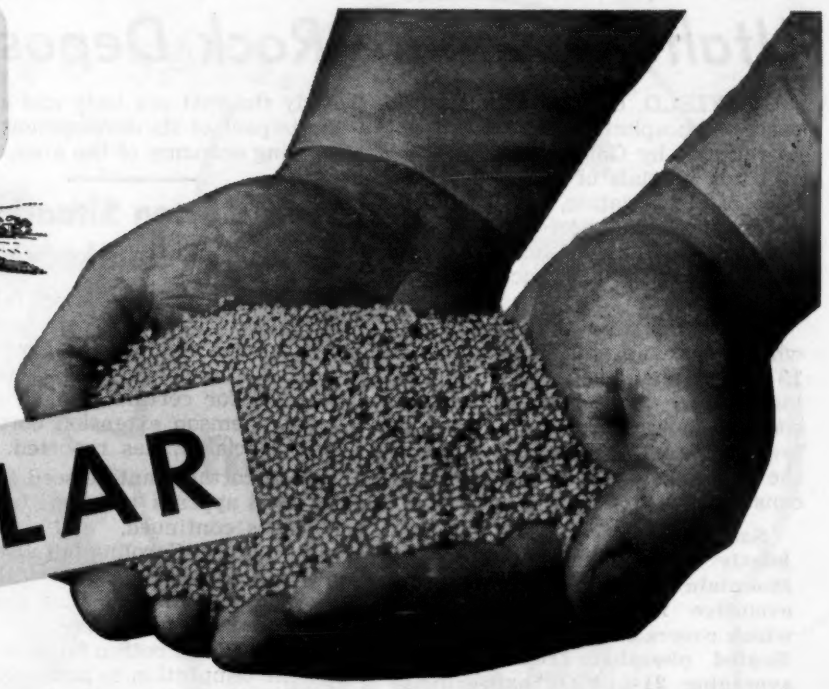
*Does not include U.S.S.R.

KANSAS STUDIES

MANHATTAN, KANSAS — The army has renewed for the fourth time a project here which is undertaking the study of the effects of temperature and synergists on insecticide action. C. C. Roan and Lallan Rai, Kansas State College, are in charge of the work. Dr. Roan also is working with Clarence J. Terhaar on a U.S. Public Health Service project studying the mode of action of organic phosphorus insecticides.

TC TENNESSEE CORPORATION





GRANULAR

TRIPLE SUPERPHOSPHATE

For Direct Soil Application

As in all U. S. Phosphoric Products, Granular Triple Superphosphate is produced under the most exacting chemical and physical controls to furnish you and your customers a product of consistent uniform particle size, completely dust free with low moisture content that will not cake or lump in storage or bridge over in the hopper. It drills free to provide the desired amount of plant food through even, uniform flow and distribution.

RIGID QUALITY CONTROL
Through Six Basic Chemical and Physical Analysis

HIGH WATER SOLUBILITY
High Water Solubility is a Characteristic of all 3 Grades

RUN-OF-PILE
Fine Texture, Highest Porosity, Large Surface Area, Small Particle Size, for Maximum Ammoniation-Granulation.

GRANULAR
Dust Free, Free Flowing, Uniform Particle Size, Medium Hardness, No Bridging Over, for Direct Soil Application.

COARSE
For Intermediate Ammoniation to Produce a Semi-Granular Product. Also Affords Excellent Compatable Mixing with Granular Potash, for Minimum Segregation, in Alkaline Grades.

GUARANTEED 46% A.P.A.

Available in Bags or Bulk

There's a **BRADLEY & BAKER** office near you. Their representative would be pleased to consult with you on your requirements and to advise on your most convenient delivery routings.

U.S. PHOSPHORIC PRODUCTS
TAMPA, FLORIDA

Division TENNESSEE TC CORPORATION

SALES AGENT:
BRADLEY & BAKER
155 East 44th Street—New York 17, New York
DISTRICT SALES OFFICES:
Atlanta, Ga. Indianapolis, Ind. St. Louis, Mo.
Norfolk, Va.

VISIT PHOSPHATE SITE—For an on-the-spot appraisal of the potential of a 15,000 acre, 700 million ton phosphate ore body held by San Francisco Chemical Co., Gov. George D. Clyde of Utah recently visited the development site. Shown here are several members of the inspection party. From left to right are Roy Martindale, consulting engineer; Roger W. Gunder, Stauffer vice president, Pacific Coast; General Maxwell Rich, Utah National Guard; Gov. Clyde; and Vincent O'Donnell, Stauffer director and general counsel.

State, Federal Officials Visit Utah Phosphate Rock Deposit

GARFIELD, UTAH—The Utah deposit of phosphate rock was inspected recently by Gov. George D. Clyde of Utah, officials of the Federal Bureau of Reclamation, and executives of Stauffer Chemical Co., Western Phosphates Inc., Mountain Copper Co., Ltd., and San Francisco Chemical Co.

It is anticipated that the deposit, which is at Vernal, Utah, and only 19 transmission line miles from Flaming Gorge, may become a major source of phosphorus within the next few years and particularly so when the Flaming Gorge Dam, now under construction, is completed.

San Francisco Chemical Co., jointly owned by Stauffer and Mountain Copper Co., Ltd., holds exclusive rights to the deposit, which covers some 15,000 acres. Indicated phosphate rock reserves, averaging 21% P_2O_5, approximate 700 million tons. San Francisco Chemical has been proving up the deposit over the past several years by means of extensive core drilling and tunneling.

Stauffer Chemical Co. is a major consumer of phosphate rock. Currently, it owns an open pit phosphate mining project at Leefe, Wyo., which is operated by San Francisco Chemical Co. This mine supplies ore to Stauffer's fertilizer plants at Los Angeles, San Francisco and Tacoma. It is also an ore source for Western Phosphates Inc. at Garfield, Utah, a company which is owned by Stauffer, American Smelting and Refining Co. and Kennecott Copper Co.

Indications are that the Leefe, Wyo., deposits can be profitably utilized for another 10 or 15 years. The Vernal, Utah, deposit, which also can be open pit mined, is being evaluated both as an additional raw material resource and as a future reserve.

To render the Vernal deposits economically utilizable, it would be necessary to build a beneficiation plant at the mining site, especially if the rock were to be shipped to customers at distant points. San Francisco Chemical Co. has developed a beneficiation process which will upgrade the ore for either electric furnace or fertilizer use. This process has been utilized at Leefe, Wyo., and it is anticipated that a substantial tonnage of the Vernal ore will be treated at Leefe in 1958 to prove out the beneficiation process on a full plant scale basis.

Moreover, if power is available from the Flaming Gorge Dam, it would be feasible to locate electric furnaces at the mining site to create an integrated phosphorus-producing complex.

Gov. Clyde and the state and federal government officials who accompanied him, visited the Vernal deposits so that they would be able to study the vast ore body and appraise the impact of its development on the growing economy of the area.

Seed Cotton Situation Serious in Southeast

CLEMSON, S.C.—Heavy fall rains throughout the Southern harvesting season have reduced the germination of cotton seed far below standards required for certification, S. A. Williams, Clemson extension cotton ginning specialist, has reported.

"The cotton-planting-seed situation for 1958 appears to be critical," Mr. Williams continued, "and applies not only to South Carolina but also to the entire Southeast and Midsouth. Both registered seed and first-year certified seed will be scacre."

He cautioned cotton farmers to "resist the temptation to plant seed with a relatively high germination regardless of how far removed they may be from the foundation stock." He pointed out that the highly developed cottons being planted today degenerate very rapidly in production and quality as they are farther removed from the foundation seed.

Mr. Williams said the best way farmers can take advantage of the constant improvement in the productivity and quality of cotton lint plants is to plant either registered seed, or first-year certified seed.

"In case neither of these is available," he added, "the next best bet is second-year certified seed."

Fertilizer to Be Topic At Florida Soils Meeting

GAINESVILLE, FLA.—Discussions on soil reaction and the use of lime and fertilizers will feature the annual meeting of the Soil and Crop Science Society of Florida at the University of Florida, Dec. 4-6, according to Dr. George D. Thornton, assistant dean of the College of Agriculture and vice president of the society.

The session will open at 9 a.m. Dec. 4 and continue until noon Dec. 6. Soils and crops workers from all of Florida are expected to attend.

Dr. Firman E. Bear, internationally known soil scientist recently retired from Rutgers University, will head a list of speakers. Other notables listed on the program include Dr. W. L. Russell, Oak Ridge National Laboratory, and Dr. L. B. Nelson, U.S. Department of Agriculture.

A number of workers from the Florida Agricultural Experiment Stations will present papers during the three-day session. Dr. D. E. McCloud, former associate agronomist at the Florida Station now with the U.S. Department of Agriculture, is president of the society.

Sodium Bicarbonate Test Shows Promise For Use with Rice

SACRAMENTO — Hopes are high that the sodium bicarbonate test which has proved practical in determining phosphate needs of cotton and grain may be equally applicable to rice crops in California's Sacramento Valley.

Duane S. Mikkelsen, field crop nutrition specialist at the University of California, Davis, said the test, developed by the U.S. Department of Agriculture, indicates how much phosphate a plant can use.

"In our rice experiments," said Mr. Mikkelsen, "the sodium bicarbonate test has correctly shown what phosphate fertilizer would do about 85% of the time."

As a result, he expects to recommend the test to rice growers during this winter's rice industry meetings. He also hopes for another such test for rice growers—a plant tissue analysis to determine the growing plant's need for nitrogen.

"Tissue analysis can tell us what the plant needs far more directly than any soil test," Mr. Mikkelsen said. "There are many factors in the soil which influence availability of plant foods."

Nitrate measuring techniques which have proven successful for sugar beets and other crops will not work for rice. But another method, which measures the amount of an amino acid called asparagine in the plant, gives promise of results.

Proper Fertilizer Rate Pays, Farmer Learns

CLYDE, N.D. — Poor crop yields convinced Randall Leonard, Clyde, N.D., that his farm needed fertilizer, but he didn't want to invest in equipment and material without knowing what to expect.

In 1956 he took soil samples and sent them to the North Dakota Agricultural College soils laboratory for testing. Soils department recommendations called for higher rates of fertilizer application than was usual for his neighborhood.

Mr. Leonard applied fertilizer in 28-foot strips, rotating strips with no fertilizer, with 70 lb. per acre, and with the recommended rate of 150 lb. per acre, and seeded the field to Kindred barley.

Yields were 16.7 bu. per acre of 41 lb. barley, 18% plump for the plots with no fertilizer; 23.1 bu. per acre of 42 lb. barley, 15% plump for the 70 lb. fertilizer plots; and 28.5 bu. per acre of 43 lb. barley, 40% plump from the plots fertilized at the recommended rate of 150 lb. per acre.

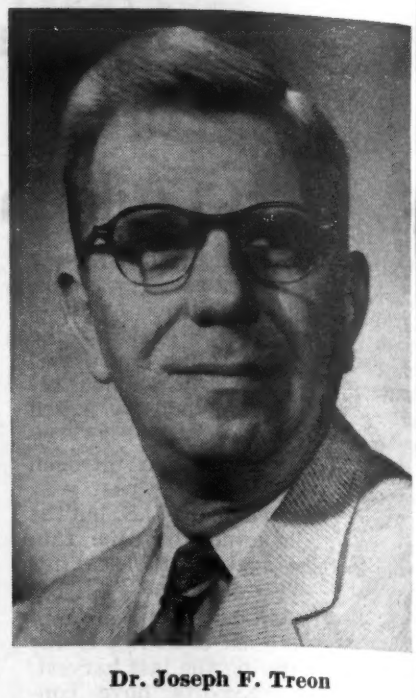
"It paid me to fertilize this year, and it looks like it's important to put on enough," Mr. Leonard said. He is one of 12 Towner County farmers making combine yield checks on fertilizer in fields where soil samples were taken last fall, reports John W. Logan, Towner County extension agent.

Pilots Seek Consolidation Of CAA Regulations

FT. WORTH, TEXAS—The Texas Aerial Applicators Assn., meeting here to elect new officers and discuss problems pertaining to their association, are organizing a campaign to consolidate Civil Aeronautics Administration regulations governing their business into one ruling.

Under the present system the contractors are forced to operate under yearly waivers, said William Lewis of Houston, who is TAAA president. Contractors must renew their operational certificate for pilots and aircraft once a year. Mr. Lewis says the crop dusters want a permanent certificate of operation.

The association plans to submit a draft of this plan to the National Aviation Trades Assn., which is meeting soon in Dallas.



Dr. Joseph F. Treon

IN NEW ATLAS POST—Dr. Joseph F. Treon has been named to head a newly established toxicology section of the chemical research department of Atlas Powder Co. Dr. W. H. C. Rueggeberg, director of the department, said that the section would carry out research on the safety of Atlas products from the standpoint of handling, use and consumption. Previously, these investigations have been performed by colleges and research institutions on a contract basis, and some of this work will be continued. Dr. Treon joined Atlas last May from the Kettering Laboratory of the University of Cincinnati's College of Medicine.

Plan Corn and Bermuda Fertilizer Demonstrations

ATHENS, GA.—Plans of the agricultural extension service to establish 22 demonstrations showing the effects of adequate fertilization and other recommended practices upon production of corn and Coastal Bermuda grass on selected farms over the state of Georgia have been announced. The demonstrations are made possible by a one-year grant of $3,000 from the National Plant Food Institute.

"With this grant we expect to demonstrate to a large number of farmers the decided advantage of full and adequate fertilization to the more efficient production of these important crops," W. A. Sutton, director, said. He added that the demonstrations will be supervised by county agents and information will be furnished by extension agronomists of the University of Georgia college of agriculture.

Mr. Sutton said that corn and Coastal Bermuda have been chosen as the demonstration crops because both are major crops which respond markedly to adequate fertilization.

"Present poor fertility practices are largely responsible for the low per acre yields of the 2,600,000 acres planted to corn in the state," he explained. "Coastal Bermuda responds to adequate fertilization to a greater degree than most other forage crops. Our agronomists expect the results of sound fertilization practices with Coastal Bermuda to do much toward encouraging the increase of the present acreage of 500,000 acres to 1,000,000 acres by 1965."

ED LIPSCOMB HONORED

PHILADELPHIA — Ed Lipscomb, Memphis, Nov. 19 received the Distinguished Service Citation of the Public Relations Society of America. The society's highest award was given the public relations director of the National Cotton Council in recognition of his "distinguished record of service to public relations" and especially his "leadership to the People-to-People Program to build friendship and understanding between Americans and people of other lands."

Industry Patents and Trademarks

2,813,014

Plant Tonic Consisting of Ammonium Sulfate, Ferrous Sulfate, and Citric Acid. Patent issued Nov. 12, 1957, to John R. Allison, Whittier, and Charles A. Hewitt, Buena Park, Cal., assignors to Leffingwell Chemical Co., Whittier, Cal. A soil conditioning material consisting essentially of ammonium sulfate, ferrous sulfate and citric acid in the proportions of about 1 weight part of ammonium sulfate, from 2-7 parts of ferrous sulfate and from 0.12 to 0.8 part of citric acid, iron contained in said ferrous sulfate being chelated by the citric acid and retained as unprecipitated iron in aqueous solutions of said material.

2,813,057

Fungicidal Aromatic Sulfonhydrazide Composition and Method of Using Same. Patent issued Nov. 12, 1957, to Johannes Thomas Hackmann, Amsterdam, Netherlands, assignor to Shell Development Co., Emeryville, Cal. A method of protecting plants from attack by parasitic pathogens which comprises treating the plants with an aromatic sulfonhydrazide having substituted on the aromatic ring an unsubstituted alkyl radical of 8 to 22 carbon atoms, said aromatic ring being chosen from the group consisting of benzene and naphthalene, and wherein said sulfonhydrazide is free of aromatic substituents attached directly to the nitrogen atoms of hydrazine.

2,813,058

Rodenticide and Method of Making Same. Patent issued Nov. 12, 1957, to Benjamin D. Smith, Utica, N.Y. A rodenticide of the multiple dosage type comprising a plurality of discrete pellets, said pellets consisting of lengths of from three-eighths to three-quarters inch cut from a continuous length of rodent attractant and rodent poison mixed into a homogeneous plastic mass and extruded under high pressure to form a tightly compacted, dry, hard, elongated member of approximately one-quarter inch cross-sectional dimension and having a smooth, impervious outer surface, the ends of the pellets so formed being relatively porous.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Hot Spot, in outline letters, for grain fumigant. Filed Sept. 24, 1956, by E. H. Leitte Co., Minneapolis, Minn. First use on or about Aug. 3, 1956.

Trithion, in capital letters, for insecticide-Acaracide. Filed March 7, 1957, by Stauffer Chemical Co., San Francisco, Cal. First use Aug. 20, 1956.

Liquilizer, hand-lettered design, for fertilizers consisting of liquid chemicals. Filed July 21, 1955, by Liquilizer Corporation, Indianapolis, Ind. First use April 14, 1954.

Weed-Nix, in hand-lettered script, for lawn grass food and weed controller. Filed Jan. 29, 1957, by F. H. Woodruff & Sons, Inc., Milford, Conn. First use about Nov. 1, 1956.

Weed-Nix Lawn Grass Food, in hand-lettered design, for lawn grass food and weed controller. Filed Jan. 29, 1957, by F. G. Woodruff & Sons, Inc., Milford, Conn. First use about Nov. 1, 1956.

Hycon, in capital letters, for fertilizer. Filed May 2, 1957, by the Carac Corp., Mountain View, N.J. First use March 22, 1956.

Brellin, in capital letters, for plant growth stimulant. Filed May 3, 1957, by S. B. Penick & Co., New York. First use March 22, 1957.

Morganic, in italic letters, for chemical compounds used as soil conditioner, plant food, fertilizer, and nitrifying agent for compost materials. Filed May 6, 1957, by Washington Organic Fertilizers, Inc., Wapato, Wash. First use April 16, 1951.

Boostabbs, in capital letters, for growth stimulant. Filed May 24, 1957, by Plantabbs Corp., Baltimore, Md. First use April 4, 1957.

Design, in form of bar running diagonally over horizontally-drawn lines, for fungicides, germicides, herbicides, insecticides, vermin control, pesticides, weed killers, rodenticides, seed protectants, fruit preservatives, acaricides, spraying compositions for winter-spraying of fruit trees and grape vines against winter-resistant forms of injurious insects, algae, mosses, and lichen as against leaf curl of grapes. Filed Nov. 7, 1955, by Schering Aktiengesellschaft, Berlin, Germany.

Pepper Weevil Found in New Jersey

TRENTON, N.J.—A damaging insect pest of peppers, the pepper weevil, has been found in New Jersey for the first time, Frank A. Soraci, director, Division of Plant Industry, New Jersey Department of Agriculture, reported Nov. 21. It is the first discovery of the pest in the northern United States.

An infestation was found last month in a pepper field near Vineland. Mr. Soraci states that 90% of the crop was destroyed and the field plowed under.

Surveys conducted since the initial discovery revealed infestations in 18 additional plantings, all in the Vineland area. Atlantic, Camden, Cumberland, Gloucester and Salem counties were surveyed. Further inspections to determine the extent of the weevil population will be made, under the supervision of Leo D. DeBlois, senior inspector of the department.

Peppers are an important truck crop in South Jersey and were grown on 8,000 acres this year. Gloucester and Cumberland counties lead in pepper production.

J. O. MICKELSON IN HOSPITAL

MINNEAPOLIS—J. O. Mickelson, district sales representative, multiwall bag sales, Crown Zellerbach Corp., Minneapolis, is in Swedish Hospital in Minneapolis following surgery performed Nov. 14. Mr. Mickelson's condition is satisfactory and he is making progress in his recuperation. He expects to be in the hospital a week and recuperate at home at least an additional week.

Croplife *Want Ads... Get Results*

BIG DAVE SAYS,

DAVISON GTS* now guarantees you a 46% A.P.A. minimum!

*Granulated Triple Superphosphate

HIGH IN P_2O_5 CONTENT—Because it is constant in analysis its guaranteed minimum is 46% A.P.A.

UNEXCELLED QUALITY —Because of Davison's more than century of experience in fertilizer formulation DAVISON Granulated Triple Superphosphate is the standard by which all other granulated products are compared. It is guaranteed to satisfy you on every count.

EASY TO HANDLE—Because of its uniform particle size it spreads evenly and uniformly and is perfect for direct applications. Does not deteriorate in handling, packaging or storage.

IDEAL FOR FORMULATIONS—Because it is easy to blend. Excellent for alkaline goods and especially recommended for O-25-25.

"TRIPLE" IN SERVICE AND DELIVERY TOO—You get DAVISON GTS *when* you want it, *where* you want it, the *way* you want it.

Progress Through Chemistry

DAVISON CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland

Producers of: Catalysts, Inorganic Acids, Superphosphates, Triple Superphosphates, Phosphate Rock, Silica Gels, Silicofluorides, Rare Earths and Thorium. Sole Producers of DAVCO® Granulated Fertilizers.

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

The Canadians believe they have discovered another valuable deposit of potash and exploratory drilling operations have already begun. Vast deposits were located in the province of Saskatchewan some years ago and the work of extraction is already advanced. The chances are that Canada will eventually become the world's largest source of potash.

The latest find is in the province of Manitoba and the deposits cover an area of 250 square miles. Handling drilling operations is S.A.M. Explorations and the first attempt, last December, was a success. Now more is being done and the work of exploration has taken on a new momentum. The new drill hole lies about six miles from St. Lazare, Man. The single hole drilled so far goes 2,550 ft. into the earth—the shallowest successful strike in Western Canada.

The potash may extend as far south as Virden, about 60 miles from the test area, but it is expected that any potash in the Virden region will lie at least 4,000 ft. down.

S.A.M. Explorations plans to determine how much potash is located in Manitoba—then it will turn the work of development over to larger companies with greater capital resources. The cost of working the deposits is estimated at $25 million and the company does not have that kind of money, officials say.

Experts say there is no doubt that other parts of Canada contain potash, too, but the beds would be limited and uneconomic to work. For instance, there are known deposits of potash in the Northwest Territories but the difficulties of recovery would be enormous.

Interest in potash has been stepped-up in Canada because of the spiralling demand from the U.S. Canadian firms, some backed by American capital, are taking advantage of the boom.

Fertilizers in Portugal

Two new fertilizer companies have been formed in Portugal. They are Sociedada Portuguesa de Petroquimica and Sociedade de Nitratos de Portugal. The first named will handle the products of the Sacor oil refinery for the production of ammonia. The second will manufacture nitrogenous and ammoniacal fertilizers.

Portugal's consumption of fertilizers has been increasing steadily in the past two or three years and by 1960 the requirement is expected to hit 320,000 tons a year. Last year local production provided 114,500 tons.

The formation of the two new companies is another step in the drive towards fertilizer self-sufficiency in Portugal. The aim is to produce 36,000 tons of ammonia a year, with total production rising to 229,000 tons.

New Indian Plant

The Indian authorities have placed an order with a French firm for the supply, erection and commissioning of a group of fertilizer plants in the Nangal area. The project is part of the campaign to increase fertilizer supply in India.

Half of the capacity is to be ready by Dec. 31, 1959, and the other half by March 31, 1960. Total capacity of the group will be 395,136 tons of nitro-fertilizer a year. The plants will consist of facilities for ammonia, nitric acid, nitro-limestone and air liquefaction. Necessary bagging and storage installations will also be provided.

DDT Immunity

In 1947, Dr. W. A. Stubbings, a South African insecticide and fungicide man, told farmers that DDT would only be efficient in the control of codling moth for 10 years. The end of that period has been reached and he has been proven right.

DDT resistance is now evident in certain of the fruit growing areas of the Cape. While a substitute is being sought, Dr. Stubbings recommends that DDT sprayings be increased from four to six in the season and that parathion be added to one spraying in December. It would be dangerous to add parathion to all the sprayings, he said, because of its toxicity.

Another South African report says that a red spider strain or species resistant to organic phosphate sprays has been found in the Elgin fruit orchards of the Cape. But only in Elgin. Last season control measures against red spiders killed off the pest in the adjacent fruit growing area of Vyeboom; on the same day the same sprays had no effect at Elgin. In fact, the red spider population at Elgin increased.

Every known poison was obtained from overseas and checked carefully. The only success achieved was with a chlorinated carbon poison and this destroyed the species after two weeks. Now plans are being made to switch to the chlorinated carbon group in the whole of the fruit growing area to guard against the spread of the species.

DDT in India

India's second DDT factory at Alwaye in Kerala state is ready to begin production. It will have a capacity of 1,400 tons a year, but full production will not be attained until sometime in 1958. Meanwhile, the expansion program at the first factory, located in Delhi and built two years ago, will be completed at the end of this year and that, too, will produce 1,400 tons a year.

With the completion of these projects, India's current requirement of anti-malarial insecticides, estimated at 5,000 tons a year, will be met wholly from indigenous sources. A little over 2,000 tons of insecticides are being produced by private manufacturers.

Both the Alwaye and Delhi factories are managed by Hindustan Insecticides (Private), Ltd., a government-owned company controlled through the Ministry of Commerce and Industry.

REMEMBER TO ORDER
CHASE BAGS
There's None Better!

CHOOSE YOUR WEEDICIDE, INSECTICIDE OR FERTILIZER APPLICATOR EQUIPMENT
from the Complete Broyhill ® LINE
the name that means
CUSTOM QUALITY
Tractor, truck and trailer mounted tanks and spraying equipment.
SEND TODAY FOR COMPLETE CATALOG
No Obligation
The Broyhill Company
Dakota City, Nebraska
Gentlemen: Please send me your complete catalog for
☐ fertilizer applicator equipment
☐ weedicide, insecticide application equipment and parts
NAME .....
ADDRESS .....
TOWN or RFD ..... State.....

Virginia Sales Steady In First Nine Months

RICHMOND, VA.—Fertilizer sales during the first nine months of this year in Virginia totaled 674,537 tons, compared with 674,677 tons in a corresponding period a year earlier.

The total for the 1957 period included 591,867 tons of mixed goods and 82,670 tons of materials. Comparable figures for the 1956 period were 590,680 tons of mixed goods and 83,997 tons of materials.

Leading grades of mixed goods during the first nine months of this year were 5-10-10 with 141,739 tons, 2-12-12 with 136,965 tons and 5-10-5 with 60,476 tons.

Included in the sales of materials for the same period were 5,444 tons of ammonium nitrate, 21,969 tons of 20% nitrogen goods, 17,403 tons of nitrate of soda, 2,599 tons of 18-19% superphosphate, 3,485 tons of 20% superphosphate, 2,659 tons of muriate of potash and 14,688 tons of lime and potash mixtures.

Herbicides Show Promise In Vineyard Tests

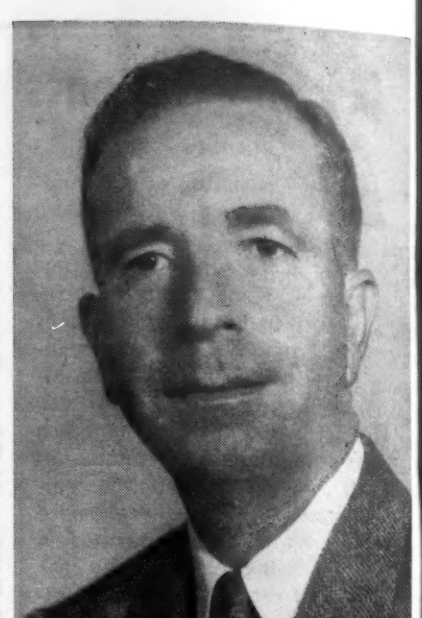
FAYETTEVILLE, ARK.—Grape growers may kill weeds in the strip directly under a trellis without hand-hoeing or possibly cutting roots and damaging trunks of vines with a grape hoe. Two pre-emergence herbicides controlled weeds in vineyards at the Arkansas Agricultural Experiment Station, Dr. J. E. Vaile, horticulturist, reports.

Monuron and diuron, both substituted urea type herbicides, applied at the rate of 3 lb. an acre will prevent emergence and development of annual grasses and broad-leaf weeds for at least 15 weeks, Dr. Vaile believes.

Three pounds of herbicide would be enough to spray a 3⅓ acre vineyard. A minimum of 50 gallons of spray an acre is recommended. This is equivalent to 1 gallon to a band 3 ft. wide by 290 ft. long.

ESA BRANCH MEETING

HOUSTON, TEXAS — The annual meeting of the Southwestern Branch, Entomological Society of America, will be held in the Shamrock Hilton Hotel, Houston, Feb. 10-11, according to Sherman W. Clark, secretary-treasurer. Program details will be announced later.



Richard H. Barton

FRONTIER PROMOTION — Richard H. Barton has been named product manager — insecticide chemicals by Frontier Chemical Co., Wichita, Kansas. Mr. Barton, who has been a part-time sales representative for Frontier since last April, formerly was with Olin Mathieson Chemical Corp. and the Ethyl Corp.

September Super Output Higher Than Year Ago

WASHINGTON — September production of superphosphate and other phosphatic materials totaled 188,128 short tons, compared with 171,604 short tons in September, 1956, according to the Bureau of the Census. Shipments last September amounted to 120,569 short tons, compared with 127,381 short tons in September a year earlier. Stocks on hand at the end of last September totaled 341,383 short tons, a reduction from 393,665 short tons a year earlier.

The September, 1957 production included 99,628 short tons of normal and enriched, 69,456 short tons of concentrated and 19,044 short tons of other phosphatic fertilizers, including wet-base goods.

Northeast Water Survey Proposed

WESTFIELD, MASS.—Officials of Massachusetts, Connecticut, New Hampshire and Vermont met here with the Connecticut River Water Shed Council to determine if the four states wish to collaborate in undertaking a broad survey of water resources in the Connecticut River Valley.

Some 50 officials passed a resolution expressing the desire that the council work with the four states. The council was delegated the job of publicizing the water shortages. Officials said public awareness is necessary to get legislative appropriations for developing new water sources.

William S. Wise, chairman of the Connecticut Water Resources Commission, expressed fears the water shortage in Connecticut will be critical in 10 years. He said the Connecticut commission would like an annual appropriation of $100,000 for the next 10 years to survey resources. He said only $40,000 was appropriated by the Legislature this year. G. E. Ferguson, a hydrologist for the U.S. Geological Survey, pointed out that federal matching funds are available.

EXCHANGE CLOSES

BOSTON—The Boston Fruit and Produce Exchange, organized in 1883, voted itself out of existence here Nov. 13. The organization has been furnishing the New England fruit and produce, dairy and meat industry with reports on prices and market conditions for almost 75 years. The Exchange had only 100 members as it passed out of existence. At its peak, it had 800.

Stock Management in Small Stores

By IRVING GOLDENTHAL

Management Consultant and former Lecturer, School of Retailing, New York University, New York, N.Y.

INTRODUCTION

Look at the small retail stores in your community and, chances are, you'll see several which always seem to have just the right merchandise at just the right prices. They know their stocks, too. Such firms have real competitive strength. This fortunate situation, however, does not develop by accident. It requires intelligent effort in managing inventories. While it does take hard work, small stores, as well as big ones, can have effective stock management.

Most small store owners have only limited amounts of capital. As a result, they need to keep what funds they have "at work" in the most productive way. In this connection, a prime consideration is the portion of available money invested in stock-on-hand. To earn a profit, your stock must turn over. Goods must be sold out and be replenished as often as possible—consistent, of course, with keeping at all times a reasonably complete assortment. "Profits are made from turnovers, not leftovers," as one retailer put it.

A number of examples cited in this article, prepared by the Small Business Administration, refer to apparel stores. However, the principles involved are directly applicable to the farm chemical dealer's operation.

A large stock does not necessarily guarantee that you have a complete stock.

Large inventories often contain masses of old and slow-moving goods, which are not in demand. These items clutter the stock and tie up capital. Small business owners, particularly, should not lose sight of the fact that capital is a commodity, and costs money like any other commodity. Whether you borrow from a bank or use your own capital, an investment of $100,000 in goods costs $5,000 to $6,000 a year in interest. Consequently, if you can reduce your inventory from $100,000 to $60,000, without losing sales, you will reduce your cost of doing business by $2,000 to $2,400.

How Large a Stock?

Your store's inventory should, of course, be large enough to serve your customers. That involves having on hand at the right time, the goods they want, at the prices they are willing to pay.

If you operate a haberdashery store, for instance, you should have in stock the sizes, styles, and price-lines in shirts that the men in your community are accustomed to wearing. When customers hopefully come into a shop in search of shirts, it is the beginning of the end to tell them that stocks have run out of this size, or that style, or a particular price-line. But this does not mean that you should carry a dozen brands of shirts when one or two brands would suffice. Neither is it necessary to offer for sale men's socks at say 49¢, 59¢, 79¢, $1 and $1.25, when, very likely, three instead of five price-lines would be ample.

The essentials of keeping a stock small, but ample, and turning over satisfactorily are:

(1) Carry a few brands, styles, and price-lines which are in steady demand;

(2) Carry these brands, styles, and price-lines complete;

(3) Buy only items which you know will sell in your store, and beware of putting too much emphasis on what goes well in someone else's store;

(4) Do not buy all the unusual lines that some vendors would like to push on you;

(5) Do not be hoodwinked into purchasing excessive quantities by the lure of extra discounts;

(6) Fill in only the items that are needed rather than placing orders "across the board," which leads to duplication of similar items already in stock.

Deadwood in the Inventory

Even if you were the most skillful buyer in the world, you would still accumulate a certain number of items which simply would not sell. Such goods are deadwood and should be disposed of without delay. There is, to be sure, an understandable reluctance on the part of merchants to take markdown losses. But slow sellers will choke your inventory just as weeds, unchecked, will choke and kill a garden.

"Let's wait," the storekeeper says hopefully, "someone will buy these goods." However, while the retailer is waiting for that special customer to come along, the merchandise is not improving with age. Also capital is tied up; fresh goods cannot be bought; and customers are getting to know the old stock all too well. Hence, the store is losing sales by not having new, more attractive merchandise.

It has been said that the giant department stores can sell earmuffs in August simply by placing a table full of them on the main floor. Not so the small store. Here the same customers come in frequently and become almost as familiar with the stock as the owner himself. Good sense dictates that slow-moving merchandise must be acted upon promptly.

Several things may be done; run a special advertisement; feature the slow-movers on counters; or offer the items at a reduced price. It is a proven rule that you won't have to

(Continued on page 15)

QUOTE

"In spite of all the scientific developments of business in recent years, we have up until this time found no substitute for selling. We need marketing procedures to develop our goals and objectives, but all our careful planning will not attain those objectives. In the final analysis, we will realize our marketing objectives only through enthusiastic selling. Only a dynamic sales program, carefully developed and skillfully executed by an enthusiastic sales organization, will assure the success of any marketing program." — J. Sidney Johnson, marketing and trade relations counsel, New York.

Fall Survey Shows Fewer Corn Borers In Maryland Fields

COLLEGE PARK, MD.—Fewer corn borers are overwintering in Maryland corn fields than a year ago, but there is a large enough carry over to cause plenty of trouble in the 1958 corn crop if weather conditions and other factors are favorable for borer development.

The largest populations of overwintering borers are on the Eastern Shore, according to a field survey recently conducted by the University of Maryland department of entomology. The purpose of the fall survey is to determine the number of borers present in cornstalks, which is an indication of what to expect the following season.

For the second straight year the fall corn borer populations in all sections of the state are down, according to Wallace C. Harding, extension entomologist who made the field counts. He says the average this fall is 60 borers per 100 plants, compared with 78 last year and 140 in 1955.

"However," he adds, "this year there are six counties with an average of more than 90 borers per 100 plants. This is considered a heavy infestation." All except one of these counties is on the Eastern Shore. Wicomico, Dorchester, Somerset, Talbot and Worcester counties have what are considered to be a heavy carry over of insects. St. Mary's is the only other county in the state with more than 90 borers per 100 plants.

Since borers overwinter in cornstalks the best and most practical control is to plow under the cornstalks, Mr. Harding points out. "Borers cannot develop once they are underground. Overwintering cornstalks should be plowed under by April 15 on the Eastern Shore. For the remainder of the state plowing should be completed by May 1, at the latest."

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Vermont extension servicemen, like others throughout the U.S., find sympathy with many fertilizer industry leaders in lamenting the poor attendance at agronomy meetings to which dealers are invited. Time after time, such meetings attract a mere handful of dealers and then often they are dealers who least need the helpful information presented at the sessions.

Vermont has about 450 dealers who are in direct contact with the farmer and his problems. Extension men have always regarded dealers to be valuable sources of information to the farmer. They add, however, that such information must be correct and up-to-date if it is to be of value.

Although some worthwhile programs have been planned for these meetings, Vermont extension men have had less than enthusiastic support and response. One sales manager of a manufacturer even offered his dealers a free steak dinner prior to an evening meeting; only a few took advantage of the offer.

In one case, 15 farmers turned up at a dealer meeting and inquired where the dealers were. (Only two dealers attended and they arrived when the program was half over.)

A survey of dealers in Orleans County revealed that most dealers of fertilizer and seeds are busy people—busy because they often have other jobs to fill such as town clerk, selectman, sheriff, or tax collector, or because other commercial ventures consume a large part of their time. These range from feed to insurance to hardware and farm machinery.

It was found that the average Orleans County dealer, with one exception, obtains only 14% of his income from seeds and 23% from fertilizer. The one exception derived 25% of his livelihood from fertilizer and would be considered more a field representative than a dealer. This may be an indication why dealers show little interest in dealer meetings.

The report of a survey on "How the Land Grant College Contributes to Fertilizer Dealer Education," published in 1953, indicates that if dealers tell the right story, the job of extension is 85% finished. The survey indicated that the average dealer does a tremendous amount of educating and that educational aid for the dealer is advisable.

Experience in Vermont indicates that a farmer buys what the local dealer stocks. Dealers say they stock what the farmer asks for. It's a closed circle which can be broken only by the efforts of extension working cooperatively with the wholesale suppliers. A great deal of progress is being made. For instance Grimm alfalfa, no longer recognized as a legitimate variety in Vermont, will disappear from seed lists this year.

In October, 1955, a complete list of

(Continued on page 14)

"This previous experience you claim to have had with machines—what were they, slot or pinball?"

What's New...

In Products, Services, Literature

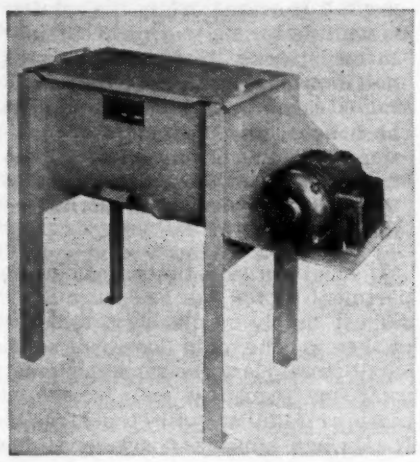
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5843—Bulk Materials Movement

A new 32-page product bulletin, "Airstream Conveyors — the Automatic Answer to Bulk Handling," has been published by the Dracco Corp. Bulletin No. 530 presents detailed technical information on how pneumatic conveying of bulk materials can be utilized. System diagrams of typical installations point out the applications of the conveyors. More than 70 illustrations are included. Materials—both granular and powdered—which can be handled are listed. A copy is available without charge. Check No. 5843 on the coupon and mail it to this publication.

No. 5825—Laboratory Mixer

The Rapids Machinery Co. has introduced its new Marion laboratory mixer, designed for use in the laboratory or as a production machine. The mixer is a "compact unit that features the same cross-blending mixing action found in the larger standard and industrial units," company officials said. Inside dimensions measure 24 in. long, 12 in. wide and 16 in. deep, with an over-all length of 36 in., a width of 19 in., and a height, with legs, of 34 in. It has a capacity of 2 cu. ft. or approximately 50 lb.



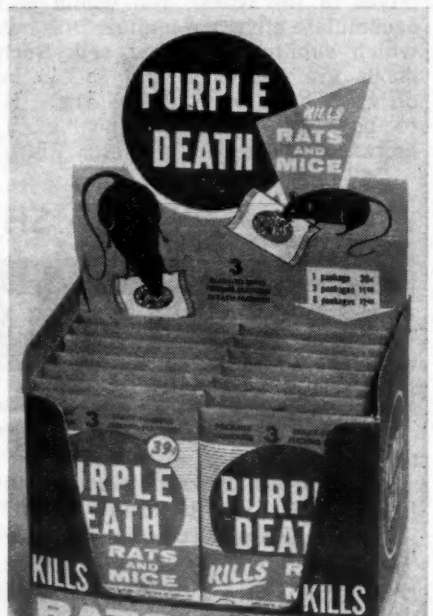
and it is available in either mild steel or stainless steel and comes equipped with a ¾ h.p. motor, iron legs, and a sponge rubber-gasketed cover. Secure complete details by checking No. 5825 on the coupon and mailing it.

No. 5828—Insecticide

A new insecticide, "6% Chlordane Dust," in a refillable squeeze duster and two new sizes for the "Hess Bomb" aerosol have been placed on the market by Hess & Clark, Inc. The chlordane dust product is designed for use on household, lawn and garden insects. The container holds 8 oz. and a 2½ lb. refill is also available. Bomb aerosol sizes are 7 oz. and 15 oz. This product contains strobane, a hydrocarbon. Dealers may secure details by checking No. 5828 on the coupon and mailing it to this publication.

No. 5826—Rat, Mouse Control

"Purple Death" is the trade name of a rat and mouse control which has been placed on the market by the O. E. Linck Co., Inc. Company officials say that the product is high in proteins, minerals and vitamins, to make it attractive to rodents. The toxicant used is said to be tasteless and odorless. A single good feeding is said to assure certain kill. The product is packed in polyethylene lined feeding stations, each station being capable of killing 6-8 rats or 10-15 mice. Dealer mark-up on the product is about 48%. Secure complete details by checking No. 5826 on the coupon and mailing it to this publication.



ly in a warehouse. The corrugated containers can be knocked down flat for easier storage until they are to be used again. The containers can also be used for shipping merchandise. Check No. 5829 on the coupon and mail it to secure details.

No. 6655—Tomato Hormone Spray

A new tomato hormone spray, called by the trade name, "Tomato Set," is available from the Miller Chemical & Fertilizer Corp. The company announcement states that the spray was developed by Dr. E. M. Emmert at the University of Kentucky experiment station, that a patent has been applied for by the Kentucky Research Foundation, and that the Miller company has been licensed by the foundation to manufacture and distribute the new spray. Application of the product can be made broadcast over the entire plant and the set and fruit size can be increased, company officials state. The product is a combination of boron and a synthetic hormone and can be mixed with insecticides and fungicides, if desired. Details may be secured by checking No. 6655 on the coupon and mailing it to Croplife.

No. 6656—Lubricant Booklet

A new booklet published by Monsanto Chemical Company's Organic Chemicals Division claims that "major savings in air compressor maintenance costs and greater safety from flash fires and explosions can be obtained with Pydraul AC, a fire resistant synthetic lubricant for air compressors." The auto-ignition temperature of the fluid is said to be greater than 1,100° F. Carbon deposits on exhaust valves and in interstage equipment are reduced with the lubricant, is is claimed. Secure the booklet by checking No. 6656 on the coupon and mailing it to Croplife. Please print name and address.

No. 6657—Can Printing

A portable printing device for printing on 5-gal. cans has been developed by the Metal Products Division of the Chapman Chemical Co. The machine is called by the trade name, "Print-A-Can Printer," and is said to handle up to 500 cans per hour with one inexperienced operator. The unit weighs 160 lb., is equipped with casters, can print markings stable enough to exceed requirements for government contracts, and is low-cost, company officials state. Secure details by checking No. 6657 on the coupon and mail it to Croplife.

No. 6650—Soil Pest Leaflets

How major soil pests can be treated by soil fumigation is described in a series of three new leaflets published by the Stauffer Chemical Co. Practical procedures are outlined for the

No. 5829—Corrugated Bulk Container

A corrugated bulk container which holds from 1,000 to 1,500 lb. of a product is being manufactured by the Gaylord Container Corporation Division of Crown Zellerbach Corp. The container is said to provide a clean storage box with a cover for protection from contamination and makes it possible to obtain maximum storage capacity safely and efficient-

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

Send me information on the items marked:

☐ No. 5825—Laboratory Mixer	☐ No. 6649—Spreader
☐ No. 5826—Rat, Mouse Control	☐ No. 6650—Leaflets
☐ No. 5828—Insecticide	☐ No. 6651—Garden Chemicals
☐ No. 5829—Bulk Container	☐ No. 6652—Bagging Unit
☐ No. 5838—Towing Tractor	☐ No. 6653—Chemicals Folder
☐ No. 5843—Bulk Materials	☐ No. 6654—Sprayer Catalog
☐ No. 5844—Vacuum Cleaners	☐ No. 6655—Tomato Hormone
☐ No. 5870—Tank Car	☐ No. 6656—Lubricant Booklet
	☐ No. 6657—Can Printing

(PLEASE PRINT OR TYPE)

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 1, Minn.

se of a product trade named, Vapam, o kill annual and perennial weeds nd germinating weed seeds, soil ungi which cause seed decay and amping off, nematodes and such in- ect pests as the garden centipede. Each of the leaflets deals with a spe- ific agricultural problem — growing iner turf, flowers and shrubs, and egetables. Copies are available with- ut charge by checking No. 6650 on he coupon and mailing it to Croplife.

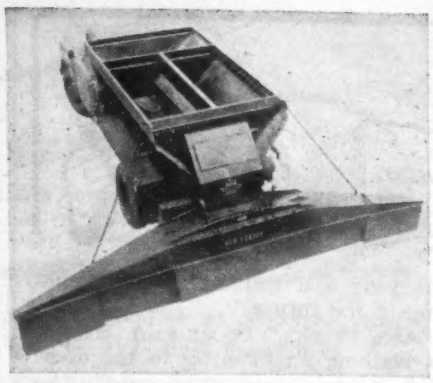
No. 6652—Bagging Unit

The Chase Bag Co. has announced new bagging unit for the fertilizer ndustry. It is called the "Southland Packer" and it is described as a com- pletely automatic, all-electric device or filling and weighing open mouth extile or multiwall paper bags. It is manufactured by the Chattanooga Boiler & Tank Co. and is distributed exclusively by Chase. It is claimed that the unit will handle 50-, 80- and 100-lb. multiwall paper bags at 25 bags per minute as a typical working speed. Sustained high accuracy of weights over an extended run is guar- anteed. Fertilizer and any other granular or free flowing material can be packed. Chase officials state: "Minimum change-over time from one analysis to another is an outstanding

feature." Cylindrical hoppers and buckets allow a clean and complete flow of material. Simplicity of design reduces maintenance costs and prob- lems. Parts are standardized and can easily be interchanged in plants where more than one packer is in use. No air or hydraulic fittings are used. The packer is made from 12 gauge or heavier steel plate and requires no external bracing for rigidity. The feeder is of the continuous operating type, using a ½ h.p. gear-enclosed motor to operate its endless belt, over 8 in. self-cleaning pulleys. Check No. 6652 and print the necessary informa- tion on the coupon and mail it to Croplife to secure details.

No. 6649—Fertilizer Spreader

The Highway Equipment Co., Inc., announces a new model, the "New Leader 3 Material Spreader." Nitro- gen, phosphate, and potash are spread to the proper proportions as deter- mined by the soil analysis of the land to be fertilized, it is claimed. The an- nouncement states: "The spreader hopper is divided into separate com- partments for three different fertil- izers. A 36 in. wide heavy-duty 4-ply belt over a chain conveyor carries the fertilizer back to the cross augers at the rear of the machine. Each fertil- izer is conveyed back on a separate section of the 36 in. belt. Sealer strips along the sides and at the end of the individual compartments keep the three fertilizers separated until they are dropped into the cross auger at the rear of the machine. The three fertilizers are first augered to the left,



dropped into another auger, then augered back to the center of the spreader where they are dropped di- rectly into twin distributor fans which uniformly distribute the fertilizer in- to the streamlined hood for an ac- curate spread. The hood, which spreads a 24 ft. width, is of sturdy construction and yet lightweight enough so that it can be folded easily by one man for road travel. The steep sloping sides of the hopper and the wide belt conveyor eliminate bridg- ing. Special cleanout doors are pro- vided for inspection, servicing, and daily cleaning." Secure details by checking No. 6649 on the coupon and mailing it to Croplife.

No. 5844—Vacuum Cleaners

A new line of heavy duty wet-dry vacuum cleaners has been introduced by the Clarke Sanding Machine Co. The line includes six units ranging from a ½ h.p. model with 2½ gal. wet and ½ bu. dry capacity to a 1½ h.p. conversion unit which converts a 55-gal. drum into a vacuum cleaner tank with 50 gal. wet and 6½ bu. dry capacity. Check No. 5844 on the coupon and mail it to secure details.

No. 6654—Sprayer, Duster Catalog

The Oakes Manufacturing Co., Inc., subsidiary of the Food Machinery & Chemical Corp., has released its "Sanitized Bean Oakes 1958 Sprayer and Duster Catalog." The catalog shows a line of tank and hand spray- ers, dusters and power sprayers for use on the farm and in the garden. John Bean Division and Oakes are sharing production responsibilities for these products. New additions to the products which Oakes will sell through its jobber and dealer ac- counts are the "Spartan" and "Tro- jan" lines of power sprayers. Secure full details by checking No. 6654 on the coupon and mailing it to Croplife. Please print necessary information on the coupon.

No. 6651—Home Garden Chemicals

Several new chemical formulations bring to a total of 28 the number of insecticides and other chemicals which are in the Du Pont Company's line of products for the home garden-

(Continued on page 15)

Now expect even better service with **UAL**

At Du Pont's Belle Works, Belle, W. Va., spheres like these are used for storage of UAL solutions. A continuing modernization and expansion program at Belle will further increase production and quality.

Du Pont continues modernization and expands facilities for URAMON®
AMMONIA LIQUORS

Now Du Pont offers you even more dependable service with "Uramon" Ammonia Liquors. The extensive modernization program at Belle Works in- cludes both expanded production facilities and a stepped-up research program.

Du Pont has been manufacturing urea-ammonia solutions for use in fertilizers since 1931. From this matchless background of broad experience come UAL products of outstanding dependability. For technical help and information on the "Uramon" Ammonia Liquors best suited to your mixing oper- ations, write Du Pont.

HERE ARE OTHER IMPORTANT ADVANTAGES OF DU PONT URAMON® AMMONIA LIQUORS:

- High-quality nitrogen from UAL resists leaching . . . supplies both urea and ammonium forms of nitrogen.
- Safe in granulation . . . no danger of flash fires and less stack. Gives firm, uniform, stable gran- ules, best for storage and application.
- Suitable for either batch or continuous mixing.
- Gives mixed goods better "feel"—minimizes caking, segregation and dusting.
- Won't corrode regular fertilizer manufacturing equipment, including ordinary steel and alumi- num.

DU PONT REG. U. S. PAT. OFF. URAMON® AMMONIA LIQUORS

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. DU PONT DE NEMOURS & CO. (INC.)
Polychemicals Department • Wilmington 98, Delaware
1616 Walnut St. Philadelphia 3, Pa.
7250 N. Cicero Ave. Chicago 30, Ill.
Du Pont Company of Canada (1956) Limited
85 Eglinton Avenue East, Toronto 12, Ontario

Doing Business With

Oscar & Pat

Oscar Schoenfeld, pudgy and slightly rotund, but with a back bone stiff as a ramrod, walked importantly up to the teller's window in the First National Bank in his town. Opening his tightly buttoned overcoat and inside coat, he brought forth a big envelope. Slowly he took off two rubber bands. carefully put them into his vest pocket and laid a bank book before the teller and a stack of checks.

"Hello, Oscar," grinned Ed Thompson, the thin faced bank teller. "Business must be good." He began looking over the checks for signatures, etc.

Oscar looked around importantly. "Ach, I could deposit twice as much if we didn't sell so much fertilizer on credit. People take so long to pay. Ach, I don't understand it. Minnie and I get ashamed when we owe anything for a day or more. We can't wait till we get downtown and pay our bills. But some people don't worry —especially that partner of mine and some of the farmers he sells."

Thompson finished tabulating the amount of the deposit and marked it in the bank book. "Oh. Oscar, this old world runs on credit nowadays. You and I shouldn't be so old fashioned. We should spend a little and live, like the young people do."

"I do not want to spent my way into the poor house," Oscar said with considerable dignity. "I like money. I like to keep it. Ach, Thompson, don't you know that money is always in style?"

With that, Oscar put the bank book back into the envelope. carefully wound the two rubber bands around it, inserted it into his inner coat pocket, buttoned his coat and overcoat and headed for the door. On the way he passed the president's cubicle, just as the grey haired, rosy cheeked, prosperous looking fellow glanced up.

"Hi, Oscar, you are just the fellow I'm looking for," he said cheerily. "Come in and sit down."

John Galbraith got up to hold open the easy swinging door for Oscar. Suspiciously, Oscar came in and gingerly sat down on the edge of the highly polished chair.

"Oscar," smiled Galbraith. "You are a stockholder in the bank and we value your opinion. Your partner Pat came in here yesterday afternoon with an advertising proposition. Actually what he said sort of surprised me. So I thought I'd ask you—"

"I'll tell you," Oscar broke in with some heat. "We are doing too much advertising now in our business. He's got a disease, that Irisher. Always he's looking for ways to spend money, and I try to save it. Advertising—ach, we have spent too much already this year."

"But," put in Galbraith, "this advertising Pat is talking about will not cost your firm a cent."

Oscar sneered slightly. "Ach, what promises that Pat makes. Don't believe him."

Galbraith picked up a highly colored ad which showed pictures of corn, potatoes, grains and vegetables. Oscar caught a glimpse of a headline which said, "Fertilizers . . . An Answer to Tomorrow's Food Problems."

The bank president cleared his throat. "Pat gave me this ad. It is clipped from an issue of Business Week magazine and is paid for by the First National City Bank of New York. The copy tells that proper application of good fertilizer can help produce the tonnage of food that is needed for today's expanding population, Oscar, and that the bank can help finance fertilizer production and farmer buying. Pat thinks our bank should publish a half page ad along the same line . . . institutional and public relations copy, you know."

Oscar shook his head vigorously. "I am a stockholder and I say no. What is the reason we should sell the farmer more than he can pay for? I have hard enough time now collecting all the fertilizer bills that Pat makes. Ach. we don't want any more of that kind of business."

"But this is an expanding economy, Oscar," pointed out Galbraith. "There are some farmers who pay their bills, and others have sound credit. This bank would not make any loans which it did not think it could collect with interest. Such an ad would bring in more business for us from farmers who could pay higher fertilizer costs and realize a greater production of their next year's crops. We screen our credit applicants very closely, you know."

"We don't screen them at all in our farm supply business," Oscar burst forth. "I try to, but, ach, that Pat don't know what good credit is. When some farmer talks of buying something, that Pat gets a fire in his eyes like he's crazy. He forgets about the credit. All he wants to do is sell."

John Galbraith smiled. "That's why you two fellows are good for each other, Oscar. Every progressive business needs a man who loves to sell and who can sell. And every business also needs a man who can watch costs so that a profit is made."

"He is not goot for me!" Oscar countered stubbornly. "Ach. I get so worked up my heart pounds hard when I go to bed nights. I get so worked up, my liver hurts me after meals. All on account of that, that spendin' Irisher."

"Well, Oscar," replied Galbraith. "if you are so opposed to the fertilizer ad idea, I'll just tear the ad up. We can just as well advertise to farmers to let us finance their buildings and farm machinery purchases. We can watch the trend of fertilizer sales this year and think about it sometime in the future."

"Ach, thanks," Oscar said. He got up, walking importantly to the door. Now he felt very exhilarated, the first time in months. That Galbraith had sense. And the man had listened when he told him about the poor paying farmers. Pat had not had his way this time. If only there were more people who could talk sense to bankers and other people. Then the country would get straightened out in a couple of years or so. Business for cash only—that was the way it should be.

RINGING THE CASH REGISTER

Higher Volume

An increase in volume without increasing expenses is being accomplished by some dealers who enlarge the area of store space used for selling and display. This means—in some cases—reducing stock room space as much as possible. Many new store layouts already use this innovation. Some stores have been successful in actually eliminating stock room space. All merchandise on hand is on display in these stores. An effective inventory control system, combined with fairly frequent deliveries from the wholesale source, enables the dealer to keep stock in good shape. Turnover rates can be improved by such an operation.

County Agents Hear of Farm Problem Challenge

By GUY LIVINGSTON
Croplife Special Correspondent

BOSTON—Ezra Taft Benson, secretary of agriculture, appeared before the National Association of County Agricultural Agents at John Hancock Hall in Boston during the 42nd annual meeting, which was headquartered at the Sheraton Plaza Hotel. The secretary to'd the conference that back in 1929 he had been appointed agricultural county agent for his home county of Franklin, Idaho. His brother is still operating the old farmstead.

The secretary restated the firm views he has been putting in the record in various speeches around the country. Farmers in Yankeeland have benefited very little from government programs, because the crops which are price supported are not generally grown in this area. In fact those who raise poultry here have had to pay higher prices for feed because of the price supports enjoyed by farmers elsewhere. This hardly makes New England farmers happy.

Mr. Benson said, in his speech, "We are working unceasingly to restore to farm prices the flexibility that is necessary to market expansion and development."

The county agents, who came from 47 states and Hawaii, heard their work praised in highest terms by the secretary, Sen. John F. Kennedy (D., Mass.) and Charles B. Shuman, American Farm Bureau president. All of them urged even greater efforts in the educational work to bring the newest techniques to American farms.

John D. Black, Henry Lee professor emeritus at Harvard University, put the challenge bluntly . . . "Much of the actual extension work being done in the counties today has not kept pace with the changing needs of agriculture in our nation. The extension program must be adapted to the changing needs of agriculture and the nation. This is all important in the United States because we are such a fast-moving country."

At the annual meeting, county agents were told that many families in far-off lands are eating more and better food today as a result of locally managed projects similar to the agricultural extension programs of American land-grant colleges and universities. Monroe McCowan, chief of the Near East and South Asia branch of Food and Agriculture Organization of International Cooperation Administration, said that in Pakistan, which is plagued with food shortages, treatment of wheat seed had increased the yield nearly 20%.

At the final banquet distinguished service awards were presented to 106 agents from 42 states and Hawaii. Among these were New England agents Walter Melnick, Northampton, Mass., and Fred L. Webster, Searsport, Maine.

Mr. Shuman told the assembly, "More than half the commercial farmers in the United States are convinced that their problems cannot be solved by action in Washington." He stressed his concern about what he called the trend toward socialism in American agriculture. He defined his concept of socialism as "big government control of individuals and the economic decisions they have to make." A long series of political panaceas for farm problems have not ended the problems, but have helped move the nation rapidly in the direction of socialism, Mr. Shuman declared.

One characteristic of a socialist program is that failure of one socialistic attempt always invites another socialistic attempt, he said. Such planners always resort to increased control; they never advocate return to a free society. Mr. Shuman cited these figures to support his views: In socialistic Sweden, 65% of people's income goes to government; in the Soviet Union 80 or 85%, although this proportion is decreasing; in the U.S., 33% goes to government, but this percentage is increasing.

"I believe the time has come to move away from government controls gradually and definitely," he sa'd. "We should not accept programs that are taking us down the road to socialism." He said his views on a good future for farming require increased knowledge and aggressive research in all areas, production marketing and new ideas for farm products, expansion of markets at home and abroad and freeing of prices to perform their normal function.

"About 80% of the farmer's problems are things he can do something about on the local level," Mr. Shuman stated. "The other 20% is beyond him—the burdensome surpluses and excessive costs of production."

A fresh approach to the farm problems was suggested to the county agents by Merritt D. Hill. general manager of the Ford Motor Co. Tractor & Implement Division, host for a breakfast meeting. "Instead of tackling big farm problems all at once," he proposed, "we ought to take them in small pieces—bite size, as the cereal people say."

At their business meeting, the county agents elected Marion Bunnell, Yakima, Wash., president; Orville Walker, Kalkasa, Mich., vice president; and Carl E. Rose, Fayetteville, Ark., secretary-treasurer. As retiring president, R. H. McDougall. Butler, Pa., becomes a member of the executive committee.

Delaware Farm, Home Week Set for Feb. 11-13

NEWARK, DEL.—Feb. 11-13 are dates for the annual Farm and Home Week Program at the University of Delaware school of agriculture, according to an announcement by school associate dean, G. Fred Somers.

The announcement stated that scientists and specialists from Delaware and other states will be asked to report on their activities related to present and future farming and homemaking problems. Topics include vegetable and crop production.

1957 AWARD RECIPIENTS

BLACKSBURG, VA. — Samuel F. McClure, Jr., Spotswood, Va., and Everett B. Bonham, Chilhowie, Va., are the 1957 recipients of the certificates of merit awarded annually by Virginia Polytechnic Institute for outstanding contributions to agriculture. The presentation of the awards was made at closing sessions of the Institute of Rural Affairs by VPI President W. S. Newman.

FARM SERVICE DATA

Extension Station Reports

Damage to the roots of alfalfa by e clover root curculio can cause a bstantial reduction in the yield of y, but tests at the Virginia Polychnic Institute Agricultural Experint Station are pointing the way to ntrol.

Dr. E. C. Turner, Jr., associate enmologist, says studies on the life story and habits of the curculio inate that the best time to apply anulated soil insecticides on alfalfa in the fall or early spring when ults are more active and the larvae ve not moved below the soil surce.

Other tests have shown that dielrin applied to the soil at the rate f 2 lb. of actual toxicant per acre ust before seeding will control the urculio for at least three years. Heptachlor at 2½ lb. per acre, hlordane at 5 lb. per acre, and ldrin at 4 lb. per acre also have iven excellent control. Dieldrin or eptachlor each at 1 lb. per acre pplied as sprays has given fair ontrol.

The scientist also believes that a ngus which was found in Virginia the summer of 1953 attacking newemerged clover root curculio adults a natural enemy of the curculio and y reduce the population to the exnt that it is not an economic probn in certain years.

★

Intensive research on plants, from croscopic fungi to tobacco, gave actical help to Connecticut growers st year.

In a report to Gov. Abraham Ribiff, James G. Horsfall, director of e Connecticut Agricultural Experint Station, reports that research tobacco physiology and processing s been reoriented in view of the anging economic pattern brought by synthetic binder. Tobacco cur and possibly fermentation can be nplified through the development of ocesses discovered by Milton L. cker and Walter Bryan. By suitle processing, a cured product is ade in from one to three weeks m harvest.

Adoption of this process would ermit increased mechanization of obacco production. It may enable onnecticut to grow tobacco at a mpetitive advantage over other ctions of the country.

Little is known concerning the mpounds responsible for flavor and oma in tobacco, except that they e volatile. An important first step ward removal of undesirable comunds and addition of desirable comunds is the extraction and concenation of the materials involved. This s now been accomplished by Lester nkin.

Techniques which may show how ade-type tobacco can be grown in n fields are under study by Dr. cker.

★

Airplane applications of Crag Glyo- fruit fungicide gave apple growers d scab control this season in New rk state and parts of New Engd, according to Union Carbide emicals Co., division of Union Carde Corp.

Reports from the company's field presentatives indicate an increasg number of growers are experienting with airplane spraying. Orardists in the past generally have lieved this type of treatment is not as effective as spraying with traditional ground equipment.

Dr. Michael Szkolnik, of the Geneva, N.Y., agricultural experiment station, and G. C. Malchoff, of Barker Chemical Co., Alton, N.Y., supervised the successful airplane spraying of an orchard near Lyons, N.Y., for the entire 1957 growing season.

Ten gallons of Glyodin spray mixture were applied per acre at 24x concentration on 10 acres of 12-year-old McIntosh, Greening, and Rome apples. Flying at tree-top level, the spray operator was able to cover the entire orchard in a matter of minutes. Equipment used on the job was a Piper Cub, 1956 Agricultural Model, equipped with a Simplex sprayer fitted with T-Jet No. 42 special aircraft cone nozzles with No. 10 tips and No. 46 whirl plates.

E. M. Miller, Carbide's northeastern representative for Crag agricultural chemicals, points out that the successful Lyons test is important because of the growing interest of orchardists in airplane application of fungicides. Main objection in the past has been that sprays or dusts do not cover the underside of leaves and fruit, nor adequately penetrate the tree. On the Lyons orchard, however, satisfactory coverage was obtained.

"Sprays containing Glyodin—a fungicide that has exceptional spreading-sticking qualities—assure better coverage than fungicide dust formulations," according to Mr. Miller. "Also, with the spray, the airplane operator can treat at any time and be sure it will stick, but a dust should be applied early in the morning or at a time when the foliage is wet so the fungicide will adhere to the leaves and fruit," he says.

Airplane application has found wide acceptance in spraying and dusting many important crops, such as cotton, tobacco, and vegetables.

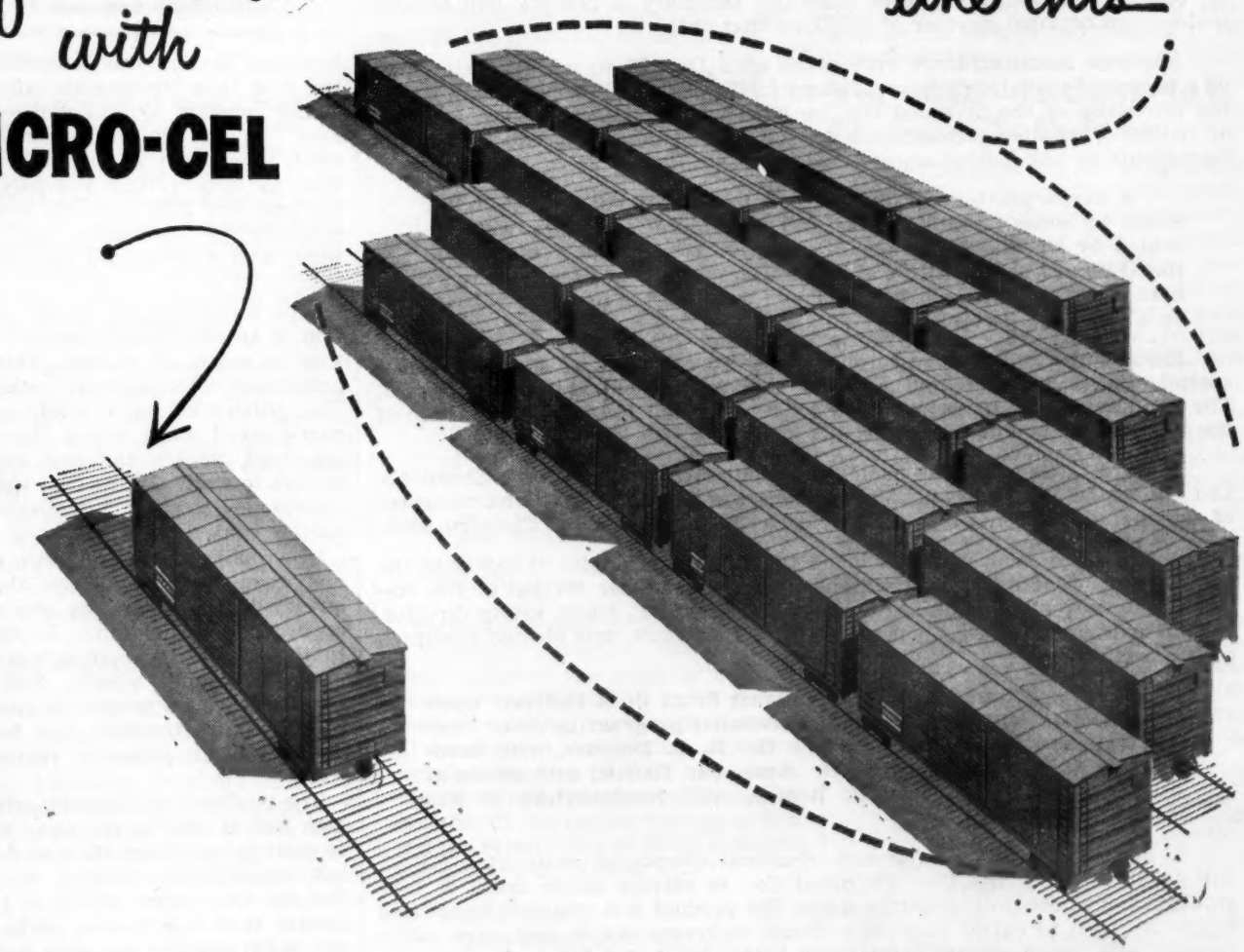
★

The idea that tannery sludge waste might be put to use as a mulch for vegetable crops has died aborning.

Horticulturists at Virginia Polytechnic Institute Agricultural Experiment Station say their greenhouse and field studies have indicated that when the waste material was added to soil, the soil pH increased rapidly and toxic effects were observed on peas, snapbeans, and cucumbers.

When planted on the sludge treated soil, these crops died before producing a full crop.

This shipment of 50% Heptachlor concentrate formulated with **MICRO-CEL** —can provide application quantities like this



The advantages of formulating insecticide dusts at the higher concentrations obtainable with Micro-Cel* is graphically demonstrated by the freight cars above. One car of 50% Heptachlor when let down to a 2½% poison at the point of application produces the equivalent of 20 cars of insecticide in the field. Since Micro-Cel costs no more than many other diluents, the substantial freight savings mean extra profits for you.

PROVEN WITH MANY POISONS

Micro-Cel, a new line of synthetic calcium silicates developed by Johns-Manville, has been tested and proven at such high dust and wettable powder concentrates as:

75% DDT	**70% Toxaphene**
75% Aldrin	**75% Dieldrin**
50% Aramite	**50% Chlordane**

Experiments with other poisons are under way today.

IMPROVES FLOWABILITY

Micro-Cel —"the powder that flows like a liquid"—reduces caking, increases flowability and gives more uniform coverage with dry dusts. Other important properties include large surface area, small particle size and high bulking action.

Ask your Celite engineer to help you adapt Micro-Cel to your particular requirements, or mail coupon below.

JM PRODUCT

*Micro-Cel® is Johns-Manville's new absorbent-grinding aid designed specifically for the insecticide formulator.

Johns-Manville

MICRO-CEL

SYNTHETIC CALCIUM SILICATES

A PRODUCT OF THE CELITE DIVISION

Johns-Manville, Box 14, New York 16, N.Y.
In Canada: Port Credit, Ontario
Please send ☐ further information; ☐ samples of Micro-Cel. I am interested in using Micro-Cel with the following poisons:

☐ Please have your local representative contact me.

Name_____ Position_____

Company_____

Address_____

City_____ Zone_____ State_____

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The fertilizer industry Round Table held in Washington, was the occasion for presentation of numerous papers on manufacturing technology and new methods. Under the direction of Dr. Vincent Sauchelli, National Plant Food Institute, the 6th annual event attracted some 275 persons from the fertilizer industry.

The cotton yield for 1957, tallied at 413 lb. an acre, was 4 lb. an acre under the record of 1955, but still greatly beyond the ten-year average. Bales produced this year were estimated at 11,788,000 as compared to 13,310,000 bales produced in 1956.

Dr. Frank J. Welch was appointed to the board of the Tennessee Valley Authority on an interim basis, to replace the late Raymond R. Paty who died earlier this year. Other members of the board, now at full strength, are Herbert D. Vogel, chairman, and Arnold R. Jones. Mr. Jones is also on the board on an interim basis. The appointments of both himself and Dr. Welch will have to be confirmed by the Senate when it convenes early in 1958.

The California Fertilizer Assn. met at San Francisco in its 34th annual meeting. William G. Hewitt, Berkeley, was elected president to succeed Jack Baker, Los Angeles. Dr. R. L. Luckhardt, Collier Carbon and Chemical Corp., Los Angeles, was named "Industry Man of the Year."

Virginia-Carolina Chemical Corp. named James E. Nall vice president and general manager of its fertilizer division. Mr. Nall was formerly with Standard Fruit and Steamship Co.

The Middle West Soil Improvement Committee voted to join the National Plant Food Institute in the latter's broad program of developing the fertilizer market potential throughout the U.S. In a subsequent move, the NPFI accepted the Middle West group and the effective date for the merge was set for Jan. 1, 1958. Zenas H. Beers, executive secretary of MWSIC will become midwestern regional director of NPFI on that date.

Pesticide manufacturers were given until Dec. 31 to submit their views on a proposed amendment to regulations for labeling various pesticides. Under the provisions of the proposed law, no label would be accepted that directly or indirectly implies recommendations or endorsement of products or their ingredients by any federal agency.

A seven point program designed to boost fertilizer use in the South by some 7.8 million tons over a period of ten years, was presented by Dr. Russell Coleman, executive vice president of the National Plant Food Institute, at the Southeastern Fertilizer Conference held in Atlanta. He said the tonnage target for the program is based on a "realistic potential."

Results of agronomic research work were reviewed by speakers at the second annual Southern Soil Fertility Conference held at Atlanta Nov. 1. The conference was sponsored by the Southern Soil Research Committee of the National Plant Food Institute.

Howard L. Sanders was named president of Northwest Nitro-Chemicals, Ltd., Medicine Hat, Alberta. Mr. Sanders was vice president and treasurer of Commercial Solvents Corp., New York, which operates the Canadian firm.

A two-day session which included talks on many angles of safety in the fertilizer manufacturing field was held by the fertilizer section of the National Safety Council at Chicago Oct. 21-22. George F. Dietz, safety director, Fertilizer Manufacturing Cooperative, Inc., Baltimore, was elected chairman of the section.

Three appointments by the National Plant Food Institute made in connection with an expanded educational program to cover various regions of the country include Dr. R. L. Beacher, with headquarters at Fayetteville, Ark.; Dr. Samuel L. Tisdale, with offices at Atlanta; and Dr. Richard B. Bahme, with headquarters at San Francisco.

A limited quantity of the new chemical compound, designated ET-57, will be supplied by the Dow Chemical Co., to certain cattle areas of four states to aid in controlling cattle grubs. The product is a systemic insecticide which is given to cattle internally. Some observers say it may save cattle growers millions of dollars annually in better meat and hides.

State control officials of fertilizers and pesticides met in Washington for their annual meetings. Paul T. Truitt, executive vice president of the National Plant Food Institute, made a plea for fertilizer consumption figures by materials and grades on a more uniform basis from all states. He suggested that such reports be made quarterly.

The pesticide control officials discussed tentative definitions for pesticides, defoliants and nematocides, as well as making a study of state laws in the light of the Miller amendment to the Food and Drug Act.

Stauffer Chemical Co. announced that its organic phosphate pesticide, Trithion, will be in large-scale production before next crop season. A multi-million-pound a year Trithion plant will be built near Henderson, Nevada, and it is expected to be in operation by February, 1958.

The National Plant Food Institute held a conference on chemical control problems at Washington, D.C. In charge of Dr. Vincent Sauchelli, NPFI scientist, the meeting heard discussions of modern methods of quality control in the manufacture of fertilizers.

A fertilizer conference held at Rutgers University, New Brunswick, N.J., heard discussions on the relationship between weather conditions and fertilizer use. The discussions indicated that if a plant is given a well balanced diet and a "full meal," it will be ready to grow fully when moisture conditions are correct.

Wilson & Geo. Meyer & Co. broke ground for a new office building and warehouse in Los Angeles. The new structure, when completed, will also house the Wilson Meyer Co., and other offices.

Most Insects Can Take Cold Weather

GENEVA, N.Y.—The common belief that unusually cold weather kills off large numbers of overwintering insects and mites was put to a severe test this past season, with the results generally favoring the insects.

"This past season offered an unusual opportunity to obtain information on this subject in parts of New York where the temperature fell last winter to minus 25° and lower, as it did at Geneva," explains Dr. Paul J. Chapman, entomologist at Cornell's Experiment Station here, a unit of the State University of New York.

The reaction of nine major pests of fruits and vegetables to these low temperatures was studied by the station entomologists. The codling moth, European red mite, and corn flea beetle, the carrier of bacterial wilt of sweet corn, were found to have been affected adversely by last winter's cold.

Of the six other species studied, those that overwintered in plant debris or in contact with the soil seemed to experience no difficulty with the low temperatures. Among these pests were the plum curculio, Mexican bean beetle, and red-banded leaf roller.

OVER THE COUNTER

(Continued from page 9)

Vermont dealers was assembled for the first time through the efforts of county agents. Questionnaires were sent out on self-addressed postal cards along with a letter of explanation. A 25% return indicated that the proposed 1956 meetings would be attended by the same old crowd, those who least needed the information.

This conclusion led to the conception of an educational medium which was to reach all dealers. Thus, the publication, "Dealergram," was born. The publication is a brief, concise, easy-to-read sheet which the dealer can read quickly and post for customers to study. Topics deal with fertilizers, soil testing, insecticides and similar subjects.

The publications are kept simple and come out irregularly, the frequency being decided by the season or urgency of the topic. In addition to the dealer list, mailings are now made to county agents, Soil Conservation Service personnel, vocational agriculture teachers, key bankers and fertilizer industry representatives.

The publication, Vermont extension men feel, is not the complete answer to getting out information to dealers, but supplements existing channels. But the experience with it so far indicates that it is helping make dealers more qualified to serve and satisfy their customers. The Vermont extension people have made a progressive step with the creation of the "Dealergram."

VPI Offers Soil Testing Leaflet

Clear and concise. That is an apt description of the Virginia Polytechnic Institute's soil testing leaflet intended for distribution to members of the fertilizer industry.

The folder, entitled, "So You Want to Have Your Soil Tested?" lists seven simple instruction rules for using the proper gathering materials, dividing the farm into areas, obtaining a good sample of soil from each one, using proper sampling tools, mixing the sample well in a clean pail, filling out the soil record sheet for each sample and mailing information. Each rule is illustrated with a drawing. M. S. Kipps, associate extension agronomist, prepared the leaflet, which may be obtained by writing to VPI at Blacksburg, Va., requesting Leaflet 84. It's a helpful educational aid for any dealer.

New England News Notes

By GUY LIVINGSTON
Croplife Special Correspondent

By GUY LIVINGSTON
Croplife Special Correspondent

According to the U.S. Department of Agriculture, there has been a moderate increase in the potato crop in Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut, New York and Pennsylvania.

These shifts in production accompanied rather marked changes in acreage, USDA reported. In 1920-24, the central states had 55% of the acreage, the eastern states 28% and the western states 17%. Today, the central states have 34%, the eastern states 33% and the western states 33%.

One of the reasons for the large decline in the central states, USDA says, is that the average yield for this region has been from 30 to 55% below the yields recorded in the eastern and western states.

Onion Trials

A report on Sweet Spanish Onion trials in 1957 was made by W. H. Lachman, research professor, olericulture, and Louis F. Michelson, technical assistant, olericulture, at the University of Massachusetts. Plants for the trials were grown from seed sown early in January in the University greenhouses. The plants were well hardened and then planted in the field during the last week in April.

Manure had been plowed down and 2,000 lb. of 5-10-10 fertilizer was broadcast and harrowed in just before planting. The plants were set four inches apart in rows spaced two feet apart. Thrips were kept under control with weekly sprayings of Dieldrin. While this season was unusually dry, an excellent yield of handsome onions was harvested from these plots, located on low lying, moist bottom land, the report said.

Bean Tests

During the 1957 season, ten varieties of green snap beans and six varieties of wax beans were tested at the University of Massachusetts Vegetable Farm. Result of the test indicated large differences between varieties both in early and total yields.

The yield data indicate that Stringless Black Valentine, Improved Tendergreen, Seminole and Topcrop were outstanding in earliness, an important factor in fresh market production. Seminole, Contender and Topcrop were the leading varieties in total yields. Cherokee and Kinghorn produced the highest early yields of wax beans. Cherokee and Puregold, however, produced the highest total yields. Puregold, the report said, is extremely late but bears a large number of high quality beans over an extremely long picking season.

Briefs

Five staff members from the University of Massachusetts attended the 50th anniversary meeting of the American Society of Agronomy Nov. 1 at Atlanta, Ga. The five, all in the College of Agriculture were Dr. Mack Drake, chemistry; Dr. Joseph E. Steckel and Dr. Karol J. Kucinski, agronomy; Donald L. Mader, forestry; and Dr. Paul Eck, floriculturist at the Waltham, Mass. Field Station.

The Massachusetts State Extension Service was represented by three delegates at the 35th National Agricultural Outlook Conference, Nov. 19-21, in Washington, D.C. Delegates were Edwin W. Hanczaryk and Barbara Higgins, Extension family economics specialists; and George W. Westcott, Extension economist.

STOCK MANAGEMENT

(Continued from page 9)

ake so large a markdown if you face acts and reduce the price of unpopular goods promptly. The longer you old on to slow-sellers, the heavier he markdowns you will eventually ave to take.

The S.M.M. Sheet

One simple device which helps considerably to control and eliminate deadwood in inventory is the S.M.M. (Slow moving merchandise) sheet. When sales of certain items show signs of slowing down, these items should be listed on this sheet.

It is a form having 10 or 12 columns in which should be noted periodically the number of items remaining at each stock-taking period. Stock-taking should be done once a week or once a month, depending on the nature of the merchandise. Once a month is enough for staples. Once a week would be better for special holiday or highly seasonal merchandise.

The function of the S.M.M. sheet is to bring old goods automatically and persistently to the attention of the storekeeper and to stir him up to do something about them. He can then review the situation again, pull the slow-sellers from under the counter where they probably are resting quietly, give his salespeople a pep talk, or take some other appropriate action. The important point is that with such a system, the merchant does not run the risk of overlooking or forgetting the slow-selling portion of his inventory.

To be sure, many small store owners object to installing any forms and systems which may mean extra trouble and cost to maintain. That feeling is only natural. However, the S.M.M. sheet can be kept up by the store owner himself and will yield rich rewards for the time spent.

Planning Stocks and Sales

No matter how small your business, sales and stocks should be planned by months for at least 6 months ahead. First, the correct relationship between the B.O.M. (beginning of month) stock, the E.O.M. (end of month) stock, and the expected sales for the month should be computed. Then the appropriate purchases for the month can be readily figured.

● **Example:** Suppose you run a small furniture store. For the month of September you anticipate sales of, say, $4,000. From past experience you judge that you will have to take some $300 in markdowns. You figure that for a rounded line you should have $7,000 worth of stock at retail on Aug 31, and $6,000 worth on hand on Sept. 30. The question then is: How much in the way of purchases do you allow to come into your stock during September?

Explanation

B.O.M. stocks		$7,000
Planned sales	$4,000	
Expected markdowns	300	4,300
E.O.M. stock without purchases		$2,700

To have the desired E.O.M. stock of $6,000, the purchases for the month should be $6,000 at retail less $2,700 or $3,300.

Stocks/Sales Ratios

Another stock management question is: What should be the ratio of stock to sales each month? To answer this question intelligently you should consider several factors. Among them are the size of your store, the nature of the goods carried, whether they are seasonal, staple, or fashion items, and the stock-turn rate which is usually obtained by stores similar to yours.

Now suppose that the customary stock turn for stores of your type and size is four times a year. Divided by 12 months this would represent a stock turn of ⅓ each month. The ratio of stock to sales is, therefore, $1 of sales for $3 worth of stock. Putting it another way, the stock for the month should be three times the planned or expected sales for the month.

● **Example:** If planned sales for the month are $2,500 and stock turn for the month ⅓, the B O M. stock should consequently be $7,500 at retail.

Note: The stock turn rate, of course, may not be the same for each month. In December, for example, stock turn should ordinarily be higher than in January. You should allow for this effect in the stock-sales relationship for these months and plan on a change in your B.O.M. stock.

Control of Individual Lines

Most merchants find it advisable to plan ahead, not only for the store as a whole, but also for individual lines of merchandise. The smaller the store, it should be pointed out, the fewer should be the classifications and, hence, the simpler the job.

For instance, if you operate an infants' shop, to assure good stock management, you should keep separate records for infants' furniture, dresses, coats, and accessories. A more detailed breakdown may be necessary as the business grows.

Dollar control of each classification may suffice for certain types of establishments. Others, however, will very likely find it profitable to institute some simple form of unit control. By means of unit control merchants are in a position to know what is selling by style, size, color, price line, and vendor from whom the item was purchased.

Many small business owners tend to fall into the snare of substituting guesswork for facts. Just because their firms are small, they often have a mistaken impression that they know all that is going on. What they do know is important, undoubtedly, but there is no substitute for simple but adequate records, which will reveal all the information required for proper stock management.

An Adequate Margin

If a man were planning a trip from New York to Los Angeles, but took along only enough money to get him as far as Chicago, it would be an understatement to say that his chances of getting to the West Coast were slim. Likewise, a merchant's chances of arriving at an over-all profit are slim if he does not obtain an adequate margin on his stocks. That markup must be sufficient to cover (1) operating expenses, (2) markdowns and stock shortages, and (3) a reasonable profit before taxes. It is prudent, therefore, to estimate the magnitude of these three factors and, based on that estimate, to set some sort of average markup as a goal to shoot for.

● **Example:** Based on your operating results in recent years, estimated expenses for next year are 28% of net sales; markdowns and shortages are put at 5%; and profits before taxes are figured for 5% also. What initial markup percentage on purchases will be required?

Explanation: Add the three percentages and you get 38%. This figure, however, is not the markup that will be required. The reason is that the percentages given are based on net sales, but the initial markup was based on the original retail value of the goods sold—before any markdowns and shortages developed. To build up the sales to their original value add to sales of 100%, markdowns and shortages of 5% giving a total of 105%. Now divide 38% by 105% and you arrive at the figure 36.2%. This is the average initial markup percentage required.

Figuring Markup on Cost vs. Retail

It is worthwhile remembering that markups are tricky things. Businessmen often become confused when they think of markup percentages. The following situation is common: A buyer purchases an item from a manufacturer for $5 and plans to retail it at $8. What is the markup percentage? The manufacturer will maintain firmly that the markup is 60%, while the store buyer will insist just as strongly that the markup is only 37½%.

Who is actually right? The answer is that they are both right. The vendor, on the one hand, is prone to take as a base the price at which he sells his product. Thus, a $3 markup on a $5 cost is undoubtedly 60%. The retailer, on the other hand, may take his retail price as the base on which he computes markup. Hence a $3 markup on an $8 retail price would be 37½%.

Figuring markup on the basis of retail prices is common in many large department stores and chains. It emphasizes the selling price of goods and bases markups, expenses, profits, and other operating statistics on the retail figure. The alternative approach, of course, is the base markup on the cost of the goods to the merchant.

Inventory Valuation-Cost and Retail Methods

Using the so-called "cost method" of inventory valuation, goods are tallied at what the merchant paid for them. When appropriate the depreciation is estimated and subtracted from the purchase figure. Applicable transportation costs are added because they increase the cost. For example, the present value of a closing inventory may be calculated in this way:

Inventory billings	$5,000
plus transportation	50
	$5,050
less depreciation	300
Present value	$4,750

Using the so-called "retail method" of inventory valuation, the combined retail value of the stock is built up from all the individual retail prices. Then, the initial markup obtained on all goods sold during the reporting period is applied to that total retail figure to yield the present value. For example, if the initial markup is 40% and the retail value of stock is $5,000, you proceed as follows:

Retail price	100%
Less initial markup	40
Cost percentage	60%

Retail value of stock ($5,000) x cost percentage (60%) = present value ($3,000).

This, of course, is a simplified illustration of what in practice can be a fairly involved technique. Nevertheless, it serves to highlight the distinction between figuring markup from the basis of the retail price, and the "retail method of inventory."

From the viewpoint of sound stock management, however, the goods you carry should be listed at cost or market whichever is lower. When this is done, the cost of goods sold is larger than would otherwise be the case, and net profits are proportionately smaller. This is desirable conservation. It is always questionable whether the goods you bought yesterday for $250 are really worth more if today's price is $300. But when wholesale prices are level or dropping off, chances are that your stock on hand is worth less than what you paid for it.

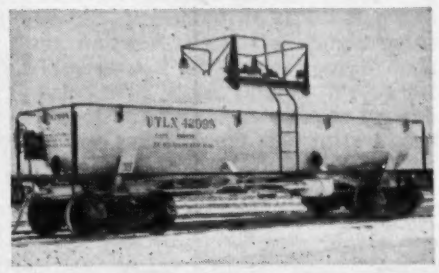
WHAT'S NEW

(Continued from page 11)

er. Among the new products are an insecticide which is a combination of methoxychlor and malathion and 72% chlordane insecticide. Also new are an insect repellent and an aerosol dressing for tree wounds. Secure details by checking No. 6651 on the coupon and mailing it to Croplife.

No. 5870—Tank Car

A new multi-purpose tank car which incorporates two fundamental changes in tank car design—elimination of the dome and underframe—is announced by the Union Tank Car



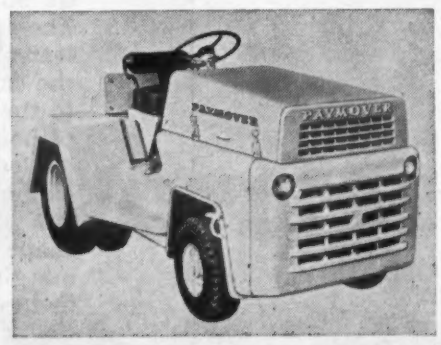
Co. Called the "HD" tank car, the unit serves where previously four separate tank classifications were required, company officials say. With only minor modifications the new tank car can be used as a general service car; for carrying acid; as an insulated car; and as a low pressure car. Secure details by checking No. 5870 on the coupon and mailing it to this publication.

No. 6653—Industrial Chemicals Folder

Sohio Chemical Co. has prepared a folder on its industrial chemicals, which include anhydrous ammonia, aqua ammonia, nitric acid, urea and 83% ammonium nitrate solution. Specifications, descriptions, uses and shipping information are listed for each of the products. The folder states that rail or truck delivery is available and that technical assistance and laboratory service are offered without obligation. Secure details by checking No. 6653 and printing the necessary information on the coupon and mailing it to Croplife.

No. 5838—Towing Tractors

The Frank G. Hough Co. has introduced its first two "Paymover" towing tractors for commercial applications. The two machines are the model T-50 with 5,000 lb. drawbar pull and the model T-60 with 6,000 lb.



drawbar pull. They are two-wheel drive models, and feature torque-converter drive and automatic transmissions. A wide variety of coupler attachments is available. Check No. 5838 on the coupon and mail it to secure details.

REORGANIZATION APPROVED

AMHERST, MASS. — Approval to bring together similar activities in the college of agriculture as a new department of entomology and plant pathology about Jan. 1 has been given by the University of Massachusetts board of trustees. The recent authorization involves the department of entomology, shade tree laboratory, seed laboratory, arboriculture, plant pathology and all members of the experiment station and extension staffs having primary responsibility as plant pathologists or botanists.

WEED OF THE WEEK

Poison Sumac

(Rhus Vernix)

How to Identify

Poison sumac grows as a coarse woody shrub or small tree, quite unlike the vine-like form of its poison-ivy relatives. The plant usually appears in the eastern half of the U.S. and is ordinarily associated with swamps and bogs, with the most typical growth occurring along the margin of areas of wet acid soil. The plants range in height from 5 or 6 ft. to small trees as tall as 25 ft. As a rule, the shrubs do not have a symmetrical upright tree-like appearance, but are more inclined to lean and have branched stems with about the same diameter from the ground level to the middle height of the plant. Leaves of poison sumac are divided into 7 to 13 leaflets, arranged in pairs with a single leaflet at the end of the midrib. The leaflets themselves are an elongated oval shape without teeth or serrations on the margins. Thy are 3-4 inches long and 1-2 inches wide, with a smooth velvetlike texture and bright orange color when they first appear in the spring. They later become dark green and glossy on the upper surface and pale green on the lower, and have scarlet midribs. Early in the fall, they turn to a brilliant red-orange or russet shade.

Harm Done by Poison Sumac

In this category, these unwanted plants cause agricultural losses only indirectly, through harming human beings who come in contact with the plant. Though some people are more tolerant than others to the effects of the plant's toxic agent (called urushiol) it is considered that such immunity is only relative and that practically everyone is susceptible to some degree to the irritating effects of this substance. The toxic agent, described as a nonvolatile phenolic material, is found in all parts of the plant, including the roots and fruit. Danger of poisoning is greatest in spring and summer when the sap is abundant, and least in the late fall or winter months. Cattle, horses, sheep, hogs and other livestock apparently do not suffer from skin irritation caused by these plants. Dogs and cats, though apparently not susceptible themselves, can carry the toxin to human beings on their fur.

Chemical Control of Plant

Poison sumac can be controlled by chemical herbicides without danger of the plant's poisoning the operator. Except in cases of unusually heavy growth, the operator may stand at a distance from the plants and apply herbicide. Chemicals recommended by various agencies include ammonium sulfamate, 2,4-D, ammonium thiocyanate, borax, 2,4,5-T (either alone or in combination with 2,4-D), creosote oil, fuel oil, sodium chlorate and sodium arsenite. Warnings are always in order concerning the fire hazards associated with sodium chlorate, particularly when the chemical is mixed with wood, cloth, or other organic materials which make it extremely combustible and easily ignited.

Illustration of Poison Sumac furnished Croplife through courtesy of U.S. Department of Agriculture, Beltsville, Md.

PILOT PROJECT

(Continued from page 1)

sion director, and Dr. Russell Cole-n, NPFI executive vice president. The institute is helping to support program through a grant of funds l also will share a substantial part the cost of a comprehensive study evaluate the results of the pro-m.

ntensified work on fertilization will made a part of the county agricul-al program for the six counties. e work will be directed by county icultural agents with the assist-e of specialists from the state ex-sion service staff, representatives the Georgia Plant Food Education-Society and other local leaders.

Primary objectives of the pro-am, according to Mr. Sutton, are make farmers and business lead-s aware of the major roles ferti-zer and lime play in building a tter agricultural economy in eorgia, to assist farmers in carry-g out the best known fertilizer d lime practices.

The National Plant Food Institute supporting the project because of potential benefits to the fertilizer ustry, according to Dr. Coleman. e program will provide an oppor-ity to study the application and ectiveness of various educational thods under field conditions.

"We hope," said Dr. Coleman, "to rn a great deal from this project ich will be useful to us in develop-our expanded program of research d education throughout the coun-."

The program in these six counties, ording to Mr. Sutton, is a part of \$200 million soil fertility program ng promoted throughout the state, l will be extended to other counties resources permit. Georgia farmers n add at least \$200 million to their ome by using recommended ferti-r practices, Mr. Sutton said.

The work of the county agents in six counties will be supervised by Y. Duke, district agent. Leader-p for technical information will be vided by J. R. Johnson, Dr. Ralph hunt and Harold Gurley.

nnesota Short Course ogram Announced

ST. PAUL—A roundup of informa-n on soil fertility and a close look what's new in fertilizer use will hlight the 7th annual Soils and rtilizer Short Course, to be held c. 9 on the St. Paul campus of the iversity of Minnesota. Program irman is Curtis Overdahl, univer-y extension soils specialist.

W. P. Martin, head of the univer-y soils department, will lead off program with a talk on "Why soil fertility problems so com-x?" George Stanford, Tennessee lley Authority official from Shef-ld, Ala., will discuss "Impact of new tilizer materials."

"Starter fertilizer needs where bulk eading is popular" will be a topic cussed by A. C. Caldwell, univer-y soils researcher. L. M. Day, U.S. partment of Agriculture economist the university, will talk on "When s fertilizer cost and when does it ?" Paul Burson, university soils entist, will discuss soil problems in rea—which he recently visited—as mpared to those in Minnesota.

A report on fertilizers and soil mpaction will come from George ake, soils scientist, and Charles nkins, extension soils specialist, ll discuss "A potential fertilizer rket—native pasture fertilization."

The program will be topped off with re than a dozen brief reports on That's new?" These reports will lude phosphate placement on flax, n deficiencies, dwarf corn, aster llows disease, new fertilizer attach-nts, water solubility of phosphate d yield potentials from fertilizer .

Cotton Production Conference to Hear Talks on Pesticides

MEMPHIS — Battle plans against insects which cost the cotton grower about one out of every eight bales this year will be aired by four speakers at the Beltwide Cotton Production Conference here Dec. 12-13.

The conference is being sponsored by the National Cotton Council in cooperation with Cotton Belt land-grant colleges, U.S. Department of Agriculture, the agricultural chemical industry, farm organizations and other groups. Some 800-900 persons are expected to gather at the Peabody Hotel for the meeting.

Changes in recommended insecticides for cotton will be given by Dr. J. C. Gaines, head of the Texas A & M Department of Entomology. Among the insecticides expected to be discussed is Sevin, which has proved very effective in limited tests against the boll weevil, bollworm and the pink bollworm.

Promising leads from basic research on the boll weevil will be described by C. F. Rainwater, who is in charge of the Cotton Insects Section of the U.S. Department of Agriculture at Beltsville, Md. Two of the leads deal with the physiology of the boll weevil in relation to hibernation and various factors, such as food, related to its ability to survive the winter.

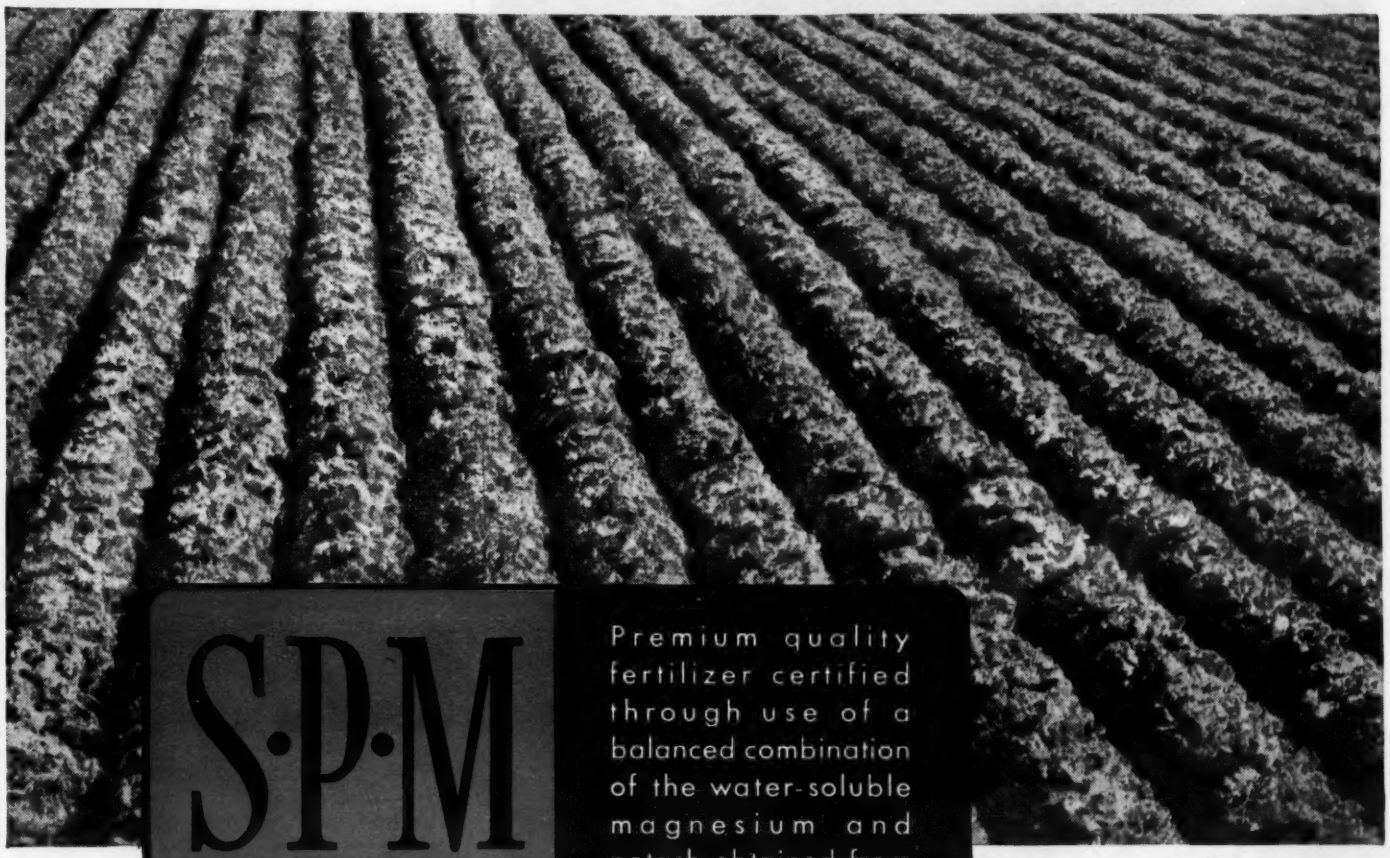
Dr. H. G. Johnston of the Council will talk on the practical methods of controlling insects, especially during late fall and early spring. Studies indicate that in recent years more boll weevils not only have been going into hibernation, but more have been surviving the winter.

Jack V. Vernon, Niagara Chemical Division of the Food Machinery & Chemical Corp., Middleport, N.Y., president of the National Agricultural Chemicals Assn., will discuss the major problems encountered in developing agricultural chemicals. These include establishment of residual tolerances, registration of materials and the need for larger staffs of technical workers to deal with the increased number and complexities of chemicals.

Four technical meetings will be held immediately preceding, and in conjunction with the production conference. They are on cotton defoliation, disease control, cotton improvement and insect control. Attendance at the latter will be limited primarily to research and extension entomologists of Cotton Belt land-grant colleges and the USDA.

APPOINTED MANAGER

MARYSVILLE, OHIO—Paul C. Williams, president of O. M. Scott & Sons, has announced the appointment of Warren A. Post as manager, brands development department. Mr. Post has been West Coast manager for the firm for seven years. He is replaced in that position by Edward Schultz.


S·P·M
PREMIUM
Premium quality fertilizer certified through use of a balanced combination of the water-soluble magnesium and potash obtained from
Sul·Po·Mag®
SULPHATE OF POTASH MAGNESIA
Reg. Trade Mark I. M. & C. Corp., Chicago

Include Sul-Po-Mag in your premium fertilizer—and display the SPM seal. The SPM seal can be displayed on bags and tags, in dealers' and manufacturers' displays, and in newspaper advertising.

Use this seal to increase sales
...before it's

TOO LATE for TOP PROFITS

Your premium fertilizer is *pre-sold* through advertising to *more than a million potential customers* when bags carry the Sul-Po-Mag seal. Your potential customers are presented with the facts: (1) how indications of magnesium deficiency —yellowing between the veins of leaves—mean top profits are lost; (2) how Sul-Po-Mag®, made by International Minerals and Chemical Corporation, can make fast-acting, water-soluble magnesium readily available to plants before it's *too late for top profits;* and (3) how the SPM seal guarantees that your premium fertilizer contains Sul-Po-Mag.

Use the SPM seal to help make sales for you ... *now* ... before it's TOO LATE for TOP PROFITS. See how it can bring in new pre-sold customers who will find that it pays, in bigger yields and higher quality crops, to buy your premium fertilizer containing Sul-Po-Mag.

SPM consumer advertising is aimed *specifically* to growers of citrus fruit, deciduous fruit, small fruit, vegetables, tobacco, potatoes, cotton, and many other crops ... to potential customers in your trade area. Use SPM *pre-selling* ... before it's TOO LATE for TOP PROFITS.

INTERNATIONAL MINERALS & CHEMICAL CORPORATION
POTASH DIVISION . . . . . 20 N. WACKER DRIVE, CHICAGO 6, ILL.

OPEN PIT MINE DEDICATED—Ceremonies on Nov. 13 dedicated this new open pit mine and refinery of United States Borax and Chemical Corp. Located at Boron, Cal., the installation covers an 80-acre site. Completion of the facilities required some two years and an expenditure of $20 million. The mine is at the site of the largest known deposit of sodium borate in the free world. The location is about 130 miles northeast of Los Angeles. In the upper picture is a general aerial view of the area, and below is seen a close-up view of the open pit itself, with refinery buildings in the background.

$20 MILLION INVESTMENT . . .

Old Contrasted With New as Open Pit Mine Is Dedicated

BORON, CAL.—The U.S. Borax and Chemical Corp. dedicated its new open pit mine and refinery here Nov. 13. Located in the Mojave Desert 130 miles northeast of Los Angeles, the mine covers some 80 acres on the site of the largest deposit of sodium borate known in the free world.

Approximately 3,000 persons were on hand to witness the ceremonies, participants in which included the company's 20 mule team which carried a symbolic "last" load of ore out of the open pit, thus marking the end of an era in mining. A flight of supersonic jet airplanes flew over in salute to the new era as a tremendous blast in the pit set the new facilities in full-scale operation.

Participating in the dedication ceremony were Hatfield Chilson, Undersecretary of the Interior; Harold J. Powers, Lt. Governor of California; Marcus F. Cooper, Brig. Gen., U.S.A.F., Edwards Air Force Base; W. C. Fortune, U.S. Navy, and James M. Gerstley, president, U.S. Borax & Chemical Corp. Master of ceremonies was J. F. Corkill, vice president.

In addition to its uses in the agricultural chemical industry, borates are widely used in the pharmaceutical industry and industrial chemical manufacturing. Production in the U.S. has grown from 12 tons in 1864 to more than 700,000 tons in 1955. Currently, there are more than 100 different uses of boron in the manufacture of various items.

U.S. Borax & Chemical Corp. was formed in 1956 by the merger of the Pacific Coast Borax Co. of Los Angeles and the United States Potash Co. of Carlsbad, N.M. The firm is now composed of four operating divisions: The Pacific Coast Borax Co. division, headed by J. F. Corkill; the U.S. Potash Co. division, headed by Dean Gidney; the 20 Mule Team Products Division, headed by D. V. Parker; and the Research Division, headed by Dr. D. R. Taylor. P. J. O'Brien, vice president and general manager is responsible for the overall operations of the four divisions.

The corporation's administrative office is at 630 Shatto Place, Los Angeles, Cal. and head office of Pacific Coast Borax and U.S. Potash Co. divisions are at 30 Rockefeller Plaza, New York.

Alfalfa Aphid Found in Ohio

COLUMBUS, OHIO—The spotted alfalfa aphid, never before known in Ohio, has been discovered in three southwestern counties. C. R. Weaver of the Ohio Agricultural Experiment station, Wooster, reports that the pest has been found in meadows in Hamilton, Brown and Clermont counties.

DELAWARE MEETING

NEWARK, DEL.—The Peninsula Horticultural Society will hold its 71st annual meeting Dec. 16-17 at Elks Hall in Salisbury, Md., Robert F. Stevens, society secretary and University of Delaware extension horticulturist, reported.

Gloomicides

The chaplain was on a return flight from a religious convocation in Honolulu when one of the plane's engines conked out. The pretty hostess bustled about reassuring the passengers, but the chaplain felt she needed a little reassurance herself.

"Nothing can happen to this plane," he told her. "There are eight bishops aboard."

The hostess forced a smile and said she would relay the comforting news to the captain. In a few minutes she was back, looking uncertain.

"I told the captain," she said. "He said he would rather have four engines."

★

As a general rule, attempts at dieting have very little effect on the bulk of middle-aged people.

★

A Connecticut dweller drove up to a filling station the other day and noticed a large sign on the door, with the announcement, "Under new management."

"What's the idea?" he asked the attendant, seeing the owner inside. "Isn't that Jerry in there?"

"Oh, sure," was the answer. "He got married yesterday."

★

Said the proud mother, "My daughter has arranged a little piece for the piano."

"Good!" replied the honest neighbor. "It's time we had a little peace."

★

One chorus girl complained to another: "Why ain't I never invited to parties in swell places like you are, Daisy? I get invited once, but they never ask me again."

"I'll tell you the reason," said her friend. "You can't discuss any subject with people when you are at a party. Why don't you read a book? Then you'll be an interesting conversationalist."

The lectured one decided to read a book—and did. A few days later she was invited to a party. She listened to the talk for a while, and then stuck in her oar: "Wasn't that too bad about Marie Antoinette?"

★

A pleasant old gentleman was browsing in the liquor department of a drug store. He asked the price of a popular brand of whiskey and was told that it sold for $5.25.

"Well, now, let's see," the old fellow pondered, "that would be $10.50 . . . Don't you have something a little less expensive?"

The clerk presented a blend priced at $4.85. Again the old gentleman pondered, took out a pencil and, figuring quickly, mumbled "Two times $4.85 is $9.70."

To the obviously puzzled clerk he explained: "You see, the way I look at it, the Lord is entitled to just as much as the devil. Every time I invest in some sort of vice, I match it dollar for dollar with a donation to my church. That way the Lord gets an even break. Also," he concluded, "it makes sinning so expensive I can't afford much of it."

★

A doting dog-owner enrolled her poodle in a training school for dogs. When the dog came home to lunch after the first morning session, the fond owner asked, "And what did you learn today, Cuthbert? Geography?"

The dog merely shook his head.

"Arithmetic?"

Again the dog shook his head.

"Perhaps you studied a foreign language?"

The pooch arched his back, lashed his tail, and answered proudly, "Meow!"

No Evidence Found That Gibberellin Has Harmful Effects

EAST LANSING, MICH.—There is no evidence yet discovered that gibberellin, the plant growth stimulator, has a harmful effect.

This is the report of S. H. Wittwer, horticultural scientist at Michigan State University, who has done much of the research on the growth stimulant that makes plants grow faster and mature sooner. Since gibberellin is not an insecticide, fungicide or herbicide, the Food and Drug Administration will not make any statement for or against the use of gibberellin on food crops unless there is some evidence that it has a harmful influence or residue. Mr. Wittwer thinks it unlikely that evidence of this type will be presented.

He cites four reasons for this belief:

Gibberellin applied to plants is absorbed but is not stored in any plant parts.

Tests thus far have shown that gibberellin has no toxic effect on animals.

Leafy vegetables sprayed with gibberellin several days before harvest show no residue at harvest time.

Gibberellin-like substances occur naturally in higher plants and may be the same chemically as gibberellins now produced artificially in laboratories.

Mr. Wittwer believes that gibberellin will be used in increasing amounts on commercial basis during the coming year.

Vulcan Containers Names Vice President for Sales

BELLWOOD, ILL.—Vulcan Containers Inc., has announced the appointment of Lawrence M. Ferguson as sales manager and vice president for sales. Mr. Ferguson succeeds Herbert B. Scharbach who resigned effective Nov. 15.

Vulcan also announced that Eugene W. Gehm, senior sales representative for the past 11 years, has been appointed assistant sales manager.

Mr. Ferguson joined the firm 15 years ago, became assistant sales manager in 1950 and sales manager in 1956. He has represented the 41-year-old metal container manufacturer in all major markets in the United States and was instrumental in developing Vulcan's market in Canada prior to the establishment of Vulcan Containers, Ltd. in Toronto in 1953.

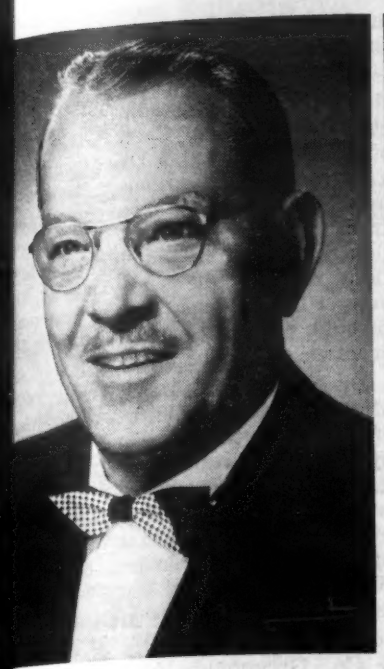
Mr. Ferguson also has had an important role in the development of Vucan's ready-for-shipment inventory of 100,000 pails, to meet customer manufacturers special container packaging requirements and production emergencies. He also has helped direct Vulcan's expanded research program in the development of special interior linings for metal containers.

Plant Food Content Climbs in Illinois

URBANA—Illinois farmers continued to buy higher analysis mixed fertilizers during the first half of 1957, reports L. T. Kurtz, University of Illinois agronomist. The mixed fertilizers bought during this period had a total plant food content of 35.8% compared with 34.8% a year ago.

Total sales of nitrogen, soluble phosphate and potash were not greatly different. However, purchases of rock and colloidal phosphate dropped 108,000 tons, probably because of unfavorable spring weather. Farmers also bought slightly more straight nitrogen, phosphate and potash materials and slightly less mixed fertilizer.

The five top analyses that made up more than 60% of all mixed fertilizers bought by Illinois farmers during the first half of the year were 10-10-10, 4-16-16, 3-12-12, 5-20-20 and 12-12-12.



John C. Long

hn C. Long Retires om Diamond Black Leaf

CLEVELAND—Retirement of John Long, veteran salesman for Diamond Black Leaf Products, a unit of amond Alkali Co., Cleveland, was nounced Nov. 19 by George V. Dunt, general manager. Because of health, Mr. Long has been on limit- service since April of this year.

Mr. Long brings to a close a career ich spans a 32-year period. For the st 23 years he has been engaged in agricultural chemicals sales field. joined the Virginia-Carolina emical Corp. as a salesman in 34. He was appointed district sales nager in 1953, with headquarters Lancaster, Pa. When Diamond rchased V-C's Black Leaf Division 1955, Mr. Long continued in that sition.

Mr. Long has been active in the tional Agricultural Chemicals sn. and has served on various comttees of that organization.

sts Being Made to estroy Screwworms

AUBURN, ALA. — A program to adicate screwworms in the southstern states is now underway.

The pests are maggots of screwrm flies, which lay their eggs on d around open wounds in warmbooded animals. Each year they have used an estimated damage in the utheast of $10 to $20 million in anials killed, deformed, or made susptible to other diseases, lowered oductions, and costs of extra labor d medication.

W. A. Ruffin, Alabama Polytechnic stitute extension entomologist, said at this year is the first since 1950 at screwworms have killed large mbers of animals in Alabama or st the farmers of that state large ms of money.

Mr. Ruffin pointed out that while e program being conducted in the lorida peninsula (sponsored by the S. Department of Agriculture and e Florida Livestock Board) may t prevent a screwworm infestation the state next year, local livestockmen are watching the progress d results with much interest.

Screwworms seldom spend the winr north of Gainesville, Fla., said r. Ruffin, but the program will exnd 100 miles north of the average erwintering line.

Therefore, if a mild winter occurs the course of the eradication proram—thus permitting flies to overinter farther north—the operations ill likely extend into southeastern labama.

IRVIN H. VOGEL RETIRES

MT. VERNON, WASH.—Irvin H. ogel, manager of the Associated eed Growers, Inc. here, has retired fter more than 15 years in that apacity. Succeeding him is Eugene ohnston, former Chas. A. Lilly Co. roduction manager in Seattle.

Presence of Insects Can Be Detected By Water Trap

WINNIPEG—F. L. Watters, head of stored product insect research for the science service division of the Canada Department of Agriculture, has developed a water trap which he believes is generally better than grain sampling for detecting the presence of insects in stored grain.

The trap consists of water-filled, 6 oz. glass jars pushed carefully into the grain until the jar tops are level with the surface of the grain. The water in the jars comes up to within 1 in. of the jar top.

After a week or 10 days the jars were taken to the laboratory and examined for pests. Most species of insects common to stored grain in Manitoba were found in the traps. However, it appears that the usefulness of this method of detecting stored grain insects depends on the depth of the infestation. Fewer insects were taken in traps as grain depth increased.

Indications are that insects do not wander aimlessly throughout stored grain and fall into water traps by accident. There is strong evidence they are attracted to the water-trap areas by the higher moisture content. Jars with no water in them were used as a check and spaced throughout the grain in a similar manner to the water-filled jars. At the end of the test period the empty jars contained fewer insects than the water traps.

Grain temperature is probably the most important single factor affecting the distribution of insects in stored grain. During spring, summer and autumn, the majority of these pests are found in the upper half of stored grain. In mid-winter, insects rarely appear near the surface but seek warmer regions near the center. Therefore water-traps are more effective in the warmer seasons of the year. Insect distribution is also affected by moisture content. Invariably more insects are found in grain with a high moisture content than in dry grain.

Water Solubility No Yield Factor In Kansas Tests

MANHATTAN, KANSAS—Recent fertilizer investigations in the Kansas Agricultural Experiment Station have shown no definite relationship between the degree of water solubility of phosphorus in the fertilizers, and the yield of oats produced.

Floyd Smith, soils professor at Kansas State College, reports a trial at the Ashland agronomy farm near Manhattan where a fertilizer in which only about a fourth of the phosphorus was water soluble produced a greater increase in yield than one in which three-fourths of the phosphorus was water soluble.

B. E. Paulsen of Russell-Miller Milling Co. listens to . . .

B. E. Paulsen, purchasing agent for Russell-Miller Milling Co., Minneapolis, Minn.

Raymond's clean, colorful printing means exact matching of company colors and accurate reproduction of trademarks, brand names and sales messages. Let a Raymond Representative show you.

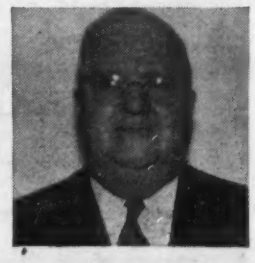
Some of the Raymond Representatives at Your Service

R. G. Roberts
Chicago, Ill.

W. R. Raleigh
Chicago, Ill.

R. J. Stevens
Chicago, Ill.

H. L. Gulden
Minneapolis, Minn.


R. T. Brown
St. Louis, Mo.

RAYMOND BAG CORPORATION
Division of Albemarle Paper Mfg. Co.
MIDDLETOWN, OHIO • RICHMOND, VIRGINIA

FERTILIZER SOLUTIONS MEETING

(Continued from page 1)

Wash.; Donald R. Weber, Spraying Systems Co., Bellwood, Ill., and John White, Auburn Fertilizer Co., Auburn, Neb.

"Selling for success" was the theme of the opening session the morning of Nov. 18. Ralph Everett, Empire Sales Training Center, Buffalo, N.Y., emphasized the importance of selling in the fertilizer solutions industry. Nothing happens until something is sold, he said. During his presentation, which was replete with selling hints, he pointed out that people want to be sold. He also emphasized the need for proper training of salesmen. The salesmen must learn to establish in the prospect's mind that (1) here is no ordinary peddler out to get a fast order and a fast buck and (2) here is a real business man interested in my problems and dedicated to bringing me something better than I now have. The salesman must learn to appeal to the buying motives of comfort, security, prestige, profit, performance and fear.

During his address, E. E. Crouse, U.S. Liquid Fertilizer Co., Indianapolis, retiring president, cited the fast growth of the liquid fertilizer industry. He gave credit to suppliers and to universities. He urged that proper support be given the association.

During a pre-convention meeting Nov. 17, a committee on standardization developed some recommendations which are expected to help the fertilizer industry grow faster. Moderator of the discussion of the committee was Ben J. Titus, U.S. Liquid Fertilizer Co., Indianapolis. Recommendations included the appointment of three committees of the association: (1) for the study of application equipment, (2) for the study of tanks and (3) for the study of corrosion. These committees are to be appointed promptly.

The group was welcomed to Cincinnati by the mayor-elect, Donald D. Clancy. He preceded an address by Minita Westcott, partner in Storms & Westcott, Chicago, association management firm. Mrs. Westcott compared the liquid fertilizer industry to a sleeping giant which is awakening.

To round out the morning program, a report of the activities committee was given by Mr. Cecil, incoming president. The committee plans to prepare a booklet which will incorporate several ideas with regard to the handling of liquid fertilizers. Charts and graphs for application rates also probably will be included, as well as hints for maintenance of equipment. Some recommendations and experiments of universities also are expected to be included.

The second day began with a panel discussion of the materials supply outlook. With Mr. Crouse moderating, the panel participants were: H. H. Tucker, Sohio Chemical Co., Lima, Ohio; William R. Bone, Monsanto Chemical Co., St. Louis, and Dean Gidney, U.S. Potash Co., New York.

There now are 44 companies with 54 nitrogen plants within the continental U.S., reported Mr. Tucker, in his analysis of the nitrogen supply outlook. The most rapid expansion in nitrogen production occurred from 1950 to 1955. Only five plants have started construction in the last two years. Capacity for producing synthetic nitrogen increased from about 400 000 tons of nitrogen in 1940 to 1.400,000 tons in 1950. The next four years doubled this capacity to about 2 900.000 tons. From 1954 to 1957 capacity increased another 1 million tons. The indicated increase for the next two or three years, however, is relatively small, Mr. Tucker said.

Synthetic nitrogen production is used for both agriculture and industry. Current figures show that total U S. demand for nitrogen for all uses, including export in 1952-53 was about 2 4 million tons. Total available nitrogen at that time, including imports, was about 2 6 million tons. For the year 1956-57 demands stepped up to about 3 2 million tons, an increase of 33% in the four year period. The supply of available nitrogen also increased by an even larger amount which indicates a current surplus if all plants are used to capacity.

Indications are that this surplus capacity will be taken up by about 1959 or 1960. It is well to remember that these indicated surpluses were based on annual production and do not necessarily mean surpluses during all periods of the year, Mr. Tucker said. In fact the sale of nitrogen during the first half of the calendar year far exceeds capacity to produce during this period.

Turning his attention to urea, Mr. Tucker said there was almost a two-fold expansion in U.S. production between 1954 and 1956. Demands for urea lead to the conclusion that at times in 1958 it will be in short supply similar to 1957, Mr. Tucker said. With startups of new urea plants late in 1958 the supply situation may ease somewhat in 1959 and 1960. By 1959 the total urea production capacity in the U.S. is expected to total some 720,000 tons annually. There are indications that additional urea plants may also come on stream in late 1959 or 1960.

In summarizing the urea situation, Mr. Tucker said that urea markets are expanding rapidly and so are production facilities to supply these needs. Fertilizer markets are the major expansion force. The near term supply situation could remain very tight.

Mr. Bone, commenting on phosphoric acid, could foresee no major problem of supply to the liquid fertilizer industry. There may be some spotty problems, he said, although burner capacity is increasing steadily. Transportation and storage during the seasonal peak cause a real load and he recommends planned scheduling.

Potash is produced all over the world and any imbalance in supply can be corrected in normal times, Mr. Gidney said. Presently, potash supplies are adequate and no shortage is expected. However, a situation can develop which can produce a pinch since the surplus is not large. For instance, a Santa Fe railway strike, which is threatened, can disrupt the supply if it lasts very long.

Following a coffee break, Dr. Howard R. Lathrope, Nitrogen Division, Allied Chemical & Dye Corp., New York, told how to plan a successful educational meeting. The first step, he said, is to have a good program and let every one know about it. The meeting should have a purpose, it should fulfill the promises made to get people to come, illustrated material should be used, the meeting place should be comfortable, the summary should be presented at the end and a registration list should be kept.

During his discussion, Mr. Lathrope stressed the need for balanced fertilizer for the soil. He said that "if a soil is deficient in one element, the yield potential will not be reached even though all other elements are present in adequate amounts."

A panel on successful business management, composed of experts from Ohio State University, began the afternoon session of the final day. The panel was made up of Dr. John K. Pfahl, department of business administration; Dr. Gordon Ryder, extension agronomist, and Dr. John W. Sharp, grain marketing and farm supply. In his discussion of management practices, Dr. Pfahl pointed out that the liquid fertilizer industry thus far had existed during a boom economy. With business seemingly in a decline at present, accounting data is essential to continued success, he said. He suggests a profit and loss statement at least on a quarterly basis.

Digging in deeper on management problems, he said that capital sources should be from owner investment, a plow-back of profits, from stockholders or on credit.

Discussing credit sales, he said that such credit costs money and it should be recovered in the cost of the product. Credit, he said, costs in extra bookkeeping, office help, collection costs and costs of actual money. Dr. Pfahl suggested that profit, as a return on an investment—not sales, should be at least 10% after taxes.

Dr. Ryder, in his discussion of selling a fertility program, said that it is becoming increasingly important to the salesman, as well as to the manufacturer, to sell a sound fertilizer program to his farmer customer to insure repeat sales. Soil testing, he said, is a basis for any fertility program.

"Sell fertilizer," said Dr. Ryder, "on the basis of the present fertility level of the soil. There is no one fertilizer recommendation for a given crop for all conditions. There is a difference in the crop yield response on high and low fertility soils with the same amount of material. Low fertility soils usually will give a higher yield increase. Many high fertility soils will give little or no response to added fertilizer. Likewise, the balance of the nutrients status must be considered; consequently a given ratio will not meet all situations."

A four-point program for marketing fertilizer was outlined by Mr. Sharp. He recommended first that the fertilizer salesman know the product. Second, he suggested that the customer's needs should be known. Thirdly, an analysis of the man should be made, and finally, a sales program should be organized.

During a panel discussion of additives to fertilizer solutions, C. Hamsher, General Chemical Division of Allied Chemical & Dye Corp., New York, talked of various pesticides in fertilizers. One should expect no more from combined fertilizers and insecticides than from individual applications of each, he said. But, in the long run, savings should be made through economy in application or the practice should be halted.

Dr. E. J. Haertl, Dow Chemical Co., Midland, Mich., said that the most effective way metals can be absorbed by plants is through chelation. A chelate, he said, performs an important function in the metabolism of living plants. He believes they are more applicable to soluble and liquid fertilizers than in dry.

Dr. Edwin F. Alder, from the agricultural research center of Eli Lilly & Co., Greenfield, Ind., said that at this early stage of the study of gibberellic acid, no assured major use in the food, feed, fiber or wood industries can be noted. However, he noted that gibberellic has been available in reasonable experimental quantities for only a year, and more time is required to establish important uses. The best that can be done now is to indicate areas that appear promising, Dr. Alder said.

Gibberellic acid already is of demonstrated value in the production of certain greenhouse and flower crops, he said. Other minor uses will be worked out in these areas. One possible wide use for the product is to take advantage of the fact that it alters the response of plants to temperature and to light. Examples are carrots, radishes and lettuce.

Another real possibilty is the increase of yields in plants used for animal feeds. Out of season pasturage might be especially useful. At present, Dr. Alder said, researchers are less optimistic about eventually using gibberellic to increase the yields of annual seed crops such as wheat, corn, oats and soybeans by treating these crops during the growing season. Similarly, more work also will be necessary before it will be known if treatment of seed with gibberellic acid will be employed on a wide scale.

Although Dr. Alder said he was not aware of any extensive published evaluations that have been performed on the simultaneous application of gibberellic and fertilizer solutions, he said he felt that it would seem to be a profitable avenue of approach. The simultaneous spray application of gibberellic and fertilizer might possess one very real advantage, he said, in view of the common feeling among workers that the growth promotion brought about by gibberellic requires that additional nutrients be available for healthy growth.

The meeting was ended in the evening by a cocktail party and annual dinner. Speaker for the banquet was Mack Sauer, editor of the Leesburg, Ohio, Citizen.

Kentucky Sales Show Small Gain

LEXINGTON, KY.—Kentucky fertilizer sales during the first three months of this fiscal year (July-September) totaled 38,972 tons, compared with 38,271 tons in a comparable period a year ago, according to the Department of Feed & Fertilizer at the Kentucky Agricultural Experiment Station here.

The total for the 1957 period included 27,250 tons of mixed goods and 11,722 tons of materials. Biggest mixed goods seller was 4-12-8, with sales of 12,226 in the 1957 quarter, compared with 11,096 tons in the 1956 quarter. Among the materials ammonium nitrate registered a gain from 3,066 tons in the 1956 quarter to 3,946 tons in the 1957 period.

CLASSIFIED ORDER FORM

Type or print your ad below and mail with check or money order to CROPLIFE, P. O. Box 67, Minneapolis 1, Minn. Rate 15c per word, minimum charge $2.25, for regular set-solid ads. Count six words for signature. Add 20c for handling replies if ad is keyed care this publication. Rate for Situations Wanted ads 10c a word, $1.50 minimum. Display or "boxed" ads $10 per column inch per insertion. All Want Ads cash with order.

SDA Issues Bulletin n Insect Control Stored Rice

WASHINGTON — How to control sect pests of stored rice under pres- t day handling and storage prac- es by using modern insecticides in manner to prevent undesirable or egal insecticidal residues was re- rted Nov. 19 by the U.S. Depart- ent of Agriculture. Recommenda- ons in the report, developed by arketing researchers of USDA's gricultural Marketing Service, su- ersede those in Farmers' Bulletin 06.

Insect pests increase rapidly in ce after it is placed in storage un- ss strict sanitation all along the ne—on the farm, in elevators, ware- ouses and mills—is observed.

The report shows there are over 0 species of insects infesting stored ce and rice products. Most destruc- ve to rough rice are the lesser grain orer, the rice weevil, and the An- oumois grain moth. The flour and rain beetles are particularly dan- erous to milled rice. Chief threat o brown rice is the rice weevil.

Old rice, sweepings and grain odged in cracks and crevices of arehouses, elevators and store- ouses harbor insects from year to ear and become sources of infesta- ion. Sanitation on the farm, in ele- ators, warehouses and mills can do uch to prevent insect infestation nd reduce losses from this cause.

Infestations in warehouses can be ontrolled by timely fumigation and reatment with aerosols, sprays or rain protectives. Proper exposure ates, fumigants and methods of ap- lication for milled and rough rice in arious stages of processing and torage are outlined in the report.

A free copy of "Controlling Insect Pest of Stored Rice," Agriculture Handbook 129, may be obtained from he Office of Information, U.S. De- artment of Agriculture, Washing- ngton 25, D.C.

JOINS CONNECTICUT STATION

NEW HAVEN, CONN.—A British cientist, Ronald K. S. Wood, has oined the staff of the Connecticut Agricultural Experiment Station for ne year to conduct research on plant iseases. Dr. Wood will still study Verticillium diseases and soft rots.

COUNCIL TO MEET

PHOENIX, ARIZ. — The 20th an- ual meeting of the National Cotton Council of America will be held at he Hotel Westward Ho here, Jan. 3-14, George G. Chance, Bryan, Texas, council president, has an- ounced.

Split Application of Lime Recommended

LAFAYETTE, IND.—A Purdue University agronomist, R. D. Bronson, has recommended a split application liming technique for the establishment of legumes on acid soils. This is the practice of plowing down half the required amount of limestone and disking the other half into the seed bed before planting.

Mr. Bronson said the object of split application is to apply the total amount of limestone needed in such a way that soil conditions are favorable to the early growth of plants—particularly legumes.

When limestone is plowed down, the acid soil is brought to the surface from below at the same time. An acid soil, when prepared as a seed bed, is unfavorable for the growth of young seedlings, the specialist explained.

Legume seedlings need a favorable pH and an adequate supply of calcium in order to thrive until their root system can "reach down" to get the limestone which has been plowed under. Agricultural ground limestone contains enough of the finer particles and can be used to get quick neutralization of soil acidity when applied in split application.

More Than Half of '56 Farm Income Yielded by Livestock

WASHINGTON — Livestock and livestock products again accounted for more than half of the cash receipts from U.S. farming during 1956, according to a Farm Income Situation report issued recently by the U.S. Department of Agriculture.

The report shows that out of a total farm marketing cash income of $30.4 billion during the year, $16.2 billion was received for livestock and livestock products and $14.1 billion for crops.

Thirty of the nation's 48 states had more of their income from livestock than from crops.

Iowa had the biggest total of livestock receipts for the year. It had an income of $1.6 billion from livestock and $426 million from crops. Iowa's livestock receipts alone were more than the livestock receipts of the eight south Atlantic states combined.

Illinois was second in cash receipts from livestock production with a total of $1.03 billion. California was third, Minnesota fourth and Texas fifth.

States with the largest percentage of income from livestock and livestock products were the dairy states of Wisconsin and Vermont.

Although the South Atlantic states generally had less income from livestock than other areas of the nation, the trend toward more poultry and livestock in the Southeast is indicated. Georgia, for example, ranked 16th nationally in total livestock receipts, and Virginia, North Carolina, Kentucky, Tennessee and Alabama, were among the top 24.

A breakdown of income from livestock and livestock products and crops by states is shown in the accompanying table.

Cash Receipts From Farming, by States, 1956

State and region	Farm marketings (1,000 dollars) Livestock & products	Crops	Total
Maine	103,325	76,537	179,862
New Hamp.	54,481	11,388	65,869
Vermont	99,179	10,622	109,801
Massachusetts	115,106	54,857	169,963
Rhode Island	15,121	6,351	21,472
Connecticut	111,780	54,362	166,142
New York	589,619	228,391	818,010
New Jersey	202,135	131,474	333,609
Pennsylvania	558,992	181,027	740,019
N. Atlantic	1,849,738	755,009	2,604,747
Ohio	624,349	395,380	1,019,729
Indiana	638,095	402,059	1,040,154
Illinois	1,032,580	907,061	1,939,641
Michigan	388,472	301,182	689,654
Wisconsin	885,235	132,075	1,017,310
E. N. Central	3,568,731	2,137,757	5,706,488
Minnesota	853,334	426,171	1,279,505
Iowa	1,619,855	425,887	2,045,742
Missouri	660,184	376,119	1,036,303
No. Dakota	166,081	393,898	559,979
So. Dakota	363,608	125,543	489,151
Nebraska	638,918	248,684	887,602
Kansas	487,816	350,492	838,308
W. N. Central	4,789,796	2,346,794	7,136,590
Delaware	76,965	35,010	111,975
Maryland	160,022	83,520	243,542
Virginia	238,437	227,828	466,265
W. Virginia	86,957	23,322	110,279
No. Carolina	243,772	755,151	998,923
So. Carolina	85,812	275,495	361,307
Georgia	317,845	366,384	684,229
Florida	150,861	520,930	671,791
So. Atlantic	1,360,671	2,287,640	3,648,311
Kentucky	253,100	302,149	555,249
Tennessee	223,169	260,641	483,810
Alabama	200,355	260,958	461,313
Mississippi	165,218	425,845	591,063
Arkansas	183,670	461,299	644,969
Louisiana	117,136	253,016	370,152
Oklahoma	294,235	204,075	498,310
Texas	817,752	1,027,940	1,845,692
So. Central	2,254,635	3,195,923	5,450,558
Montana	188,481	207,796	396,277
Idaho	155,221	212,275	367,496
Wyoming	92,248	28,136	120,384
Colorado	280,127	142,187	422,314
New Mexico	110,088	92,309	202,397
Arizona	108,395	264,042	372,437
Utah	107,522	38,841	146,363
Nevada	30,956	5,724	36,680
Washington	192,297	341,611	533,908
Oregon	171,480	236,372	407,852
California	989,921	1,829,774	2,819,695
Western	2,426,736	3,399,067	5,825,803
U. S.	16,250,307	14,122,190	30,372,497

INSECT RESISTANCE

(Continued from page 1)

izing the species, the chemical, and the general environment greatly influence the rate and degree of resistance development."

On the subject of control, Dr. D. O. Wolfenbarger, Sub-Tropical Experiment Station, Homestead, Fla., said that other states are encountering problems similar to those of Florida. He said that certain insect pests such as mites, aphids, leafhoppers and beetles are not as susceptible to applications of certain pesticides as in former years. He said that resistance build-up has been proved, and that attempts are being made to determine an alternate treatment that will give satisfaction.

However, he emphasized that ineffective control does not always stem from build-up resistance, but frequently results from heavier infestations or improper application of insecticides.

Dr. E. G. Kelsheimer, Gulf Coast Experiment Station, Bradenton, Fla., mentioned some of the causes of poor control which are erroneously attributed to resistance. He said that "insect resistance to insecticides is an established fact. However, before we accept the failure of certain materials to effect a control as insect resistant, it is necessary to evaluate certain factors that contribute to poor control. Some of the factors that have an effect upon good insect control are formulations, timeliness and compatibility."

Dr. Kelsheimer mentioned other factors contributing to poor control. Inadequate application was said to be caused by running spray equipment too fast, under too much pressure, over rough terrain or with improperly functioning nozzles. More spray and more frequent applications were said to be needed for better control. "Lack of control," said Dr. Kelsheimer, "does not necessarily establish the fact of resistance until all other factors have been considered."

John W. Wilson, Central Florida Experiment Station, Sanford, Fla., said that commercial companies and federal and state research agencies are devoting a great deal of time to the discovery and development of new chemicals to replace those for which pest insects have developed resistance. Particular emphasis was placed upon the importance of formulations which do not deteriorate in storage, and on the use of alternate chemicals in combatting insects which have demonstrated resistance to previously effective chemicals.

W. G. Genung, Everglades Experiment Station, Belle Glade, Fla., listed some of the insects which experiments indicate have actually developed strong resistance.

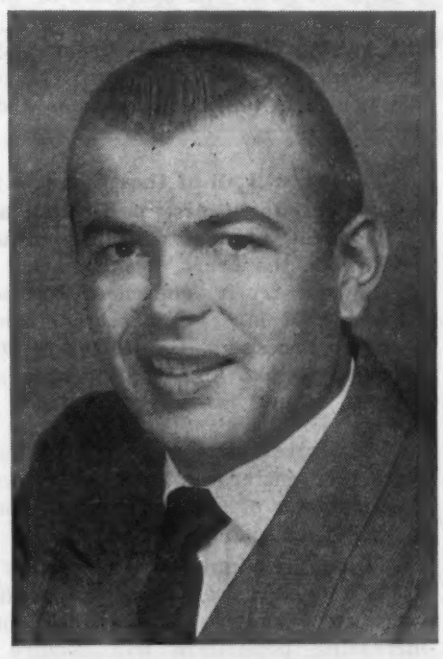
SEEKS INFORMATION — Aaron Beresky, agronomist for Fertilizer and Chemicals, Ltd., Haifa, Israel, discusses use of aqueous ammonia with Dr. R. L. Luckhardt, supervisor of agricultural technical service, Collier Carbon & Chemical Corp., manufacturer of Brea Brand fertilizers, during the former's visit to Los Angeles, Cal. Mr. Beresky, with Baruch Yatziv of the Israeli Ministry of Agriculture, has been conducting field tests with liquid fertilizers and dry ammonium sulfate in Israel for the past two years. They expected to terminate their tour of the U.S. around the middle of November.

Farm Subsidy Program Comes Under Attack

WORCESTER, MASS. — The Massachusetts Farm Bureau Federation began study Nov. 12 of a resolution calling for "orderly elimination of agricultural subsidy programs."

The 200 delegates at the 37th annual meeting were advised by the resolutions committee that federal subsidies have proved "a bonanza to those who need help least and a pittance to those who need it most."

It condemned rigid and flexible supports and "the soil bank type" program as expensive and detrimental to the farmers in public relations. Nominated for a third two year term as president, Francis E. Barnard of Shelbourne, told delegates that the "main issue facing farmers in the immediate future is taxation."



Robert G. Buescher

JOINS SPECIFIDE STAFF—Robert G. Buescher has joined Specifide, Inc., Indianapolis, as a sales representative in Indiana and Ohio. He is a graduate from the University of Tennessee and will make his headquarters in Indianapolis.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

USDA LEADERS DECLARE . . .

Shifting Farm Scene Looks Good for Trade

True D. Morse, under-secretary of agrriculture, in an address before the California Fertilizer Assn. recently, outlined agricultural progress which he said is developing on two major fronts. This new rural America, he said, is emerging fast and will continue to develop into larger and perhaps fewer commercial family farms and more part-time and residential farms, with salaries and wages comprising a major portion of the latter's family income. In 1954, he reported, the non-farm income of farmers was equal to about 40% of the net income of all farmers.

Mr. Morse said that the trend had been going on many years before the present administration took office. He quoted some interesting statistics to back up his point, stating that large and medium scale farms number about 1,290,000 units with product sales of $5,000 or more a year. (This number has increased from 897,000 since 1939.) These farms sell 79% of the farm marketings.

On the other hand, farms marketing between $2,500 to $4,999 worth of farm products have declined sharply from 1,015,000 in 1939 to 811,000 in 1954. This group sells only 12% of farm marketings. Thus the shift is seen in the form of a 44% increase in 15 years in the more productive and larger farms, and a 20% decrease in the smaller, medium scale farms.

In 1954, he said, 2,101,000 commercial farms produced 91% of the total value of sales from farm marketings. Because of this fact, these 2.1 million commercial farms get the major benefits of programs such as research, marketing, and education and the governmental price support and stabilization programs on which the costs in fiscal 1956 were $1.9 billion and for 1957 jumped to over $3 billion.

Small-scale, part-time and residential farms have also shown "dramatic changes," the under-secretary said. (These are the farms that sell less than $2,500 of products annually.) During the past 15 years, he said, these units have increased in number from 1,181,000 in 1939 to 1,507,000 in 1954; a jump of 22%. The operators of these farms, it was explained, worked off the farm 100 days, or the income of the family from off-farm sources exceeded sales from the farm. The larger part of the non-farm income was wages and salaries, he said.

How will all of these changes affect the sale of fertilizers, pesticides, and other chemical products for agricultural use? That is the heart of the matter so far as the industry is concerned. Will not the increase of larger and more efficient farms make necessary the utilization of chemical helps toward higher production and lower unit costs?

Mr. Morse indicated an affirmative attitude toward this matter, and quoted Dr. Byron T. Shaw, administrator of the agricultural research service of USDA, as follows:

"Today, our immediate concern is to make full use of our immense agricultural productivity. But we must also look ahead, to the time when an increasing population will require further increases in output of our farms and forests. The projected requirements for 1975, according to present estimates, call for an output more than a fourth greater than the record production of 1955 . . .

"We expect consumption of plant nutrients in fertilizers to reach a level of 10 to 12 million tons by 1975. This represents an increase of 75 to 100% over current use. Our forecast is based on the following considerations:

"(1) Consumption today is about four times that of the 1935-39 average and nearly 1¾ times as much as the average of 1947-49.

"(2) Although there have been marked increases in the use of fertilizers on the individual farm, we have not reached the optimum, and most farmers today would find it profitable to use more fertilizer.

"(3) The United States has large resources of raw materials for fertilizer and agricultural lime and excellent sources of energy to process them.

"(4) Although science and technology will continue to bring changes in our food and our eating habits, we do not anticipate striking alterations that would reduce the demand for fertilizers in the next 20 years . . ."

It would appear from the preceding paragraphs that the industry has little to fear from the changing agricultural scene. In fact, leaders in the trade have indicated to us that they expect to see a considerable upturn in business over the next few years. We would say that the prospect for better business is good; not only for the distant long run, but also for the seasons immediately ahead.

Fertilizer-Using Farmers "Good Credit Risks"

If the attitude of a Maryland banker toward loaning money to farmers for purchases of fertilizer were held by bankers everywhere, a big credit problem would be solved.

Abe Z. Gottwals, chairman of the agriculture committee of the Maryland Bankers Assn., in discussing a cooperative project between his group and the National Plant Food Institute, said that bankers should become more aware of the interdependence of the banking profession and the industries whose members have farmers as their customers.

"Jointly," he said, "we mutually are concerned in helping farmers to attain greater agricultural independence and we all must use every available opportunity to stress the need of following the recommendations of the Maryland agricultural extension service and experiment station. Farmers who adopt their land-grant college's recommendations are better customers for bankers and all other businessmen. They are excellent credit risks."

Plea for Diversification

A plea for greater diversification in farm practices was made recently by Dean Frank J. Welch of the University of Kentucky's college of agriculture and extension. Speaking to a farm group in his state, Mr. Welch pointed out the narrow scope of agriculture there by reminding his audience that more than 87% of the state's total farm income is derived from tobacco and livestock.

Why is this? Dean Welch told his listeners that part of the lack of diversity is because Kentucky farms are "too small to take advantage of scientific and technical advances." He said that the average Kentucky farm is 93 acres, compared with a national average of 242 acres.

This condition should offer a challenge to the industry not only in Kentucky, but in other areas where smaller acreages and a single crop economy dominate the scene. Fertilizer and pesticide sales are likely to expand where diversity is greater; but it takes salesmanship to do the job.

Croplife's Home Office

Croplife

BPA — *Member of Business Publications Audit*

NBP — *Member of National Business Publications*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG
Editor

DONALD NETH
Managing Editor

EDITORIAL STAFF — John Cipperly, Washington Correspondent; George E. Swarbreck, Canadian and Overseas Editor; Emmet J. Hoffman, Marketing Editor; Walter C. Smith, Research Director.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Production Manager; Bruce A. Kirkpatrick, Assistant Advertising Production Manager.

BUSINESS STAFF—Martin E. Newell, Chairman of the Board of Directors; Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald Neth, Secretary; Thomas A. Griffin, Business Manager; Edwin J. Hartwick, Circulation Manager; James G. Pattridge, Assistant Treasurer; Richard Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

BRANCH OFFICES

EASTERN STATES—Paul L. Dittemore, Eastern Advertising Sales Manager; James W. Miller and George W. Potts, Advertising Sales Representatives; Suite 3214, 551 Fifth Ave., New York 17, N.Y. (Tel. Murray Hill 2-2185).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager; 612 Board of Trade Bldg., Kansas City 5, Mo. (Tel. Victor 2-1350).

NORTHWEST—Paul A. Anderson, Advertising Sales Representative, P.O. Box 67, Minneapolis 1, Minn. (Tel. Federal 2-0575).

WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—THE NORTHWESTERN MILLER. THE AMERICAN BAKER. FEEDSTUFFS. MILLING PRODUCTION

MEETING MEMOS

ec. 5—Southwest Irrigation Management Exposition, Eastern New Mexico Fairgrounds, Roswell, N.M.

1958

n. 21-22—Illinois Fertilizer Industry Conference, University of Illinois, Urbana, Ill.

n. 23-24—Tenth Illinois Custom Operators School, University of Illinois, Urbana.

EDITOR'S NOTE — The listings bove are appearing in this column or the first time this week.

ov. 25—Oklahoma Fertilizer Dealers Conference, Oklahoma State University, Stillwater, Okla.

Nov. 25-26—Entomological Society of America, Eastern Branch Meeting, Commodore Hotel, New York, B. F. Driggers, New Jersey Agricultural Experiment Station, New Brunswick, N.J., Branch Secretary.

Nov. 26—Oklahoma Soils and Crops Conference, Oklahoma State University, Stillwater, Okla.

Nov. 26 — Manufacturing Chemists Assn., 7th Semi-Annual Meeting and Winter Conference, Hotel Statler, New York.

Dec. 1-3—Southern Seedsmen's Assn., Jung Hotel, New Orleans.

Dec. 2-3—Plant Food Producers of Eastern Canada, Seaway Hotel, Toronto, Canada.

Dec. 2-5—Entomological Society of America, 5th Annual Meeting, Hotel Peabody, Memphis, Tenn., R. H. Nelson, 1530 P St., N.W., Washington 5, D.C., Executive Secretary.

Dec. 2-5—Cotton States Branch, Entomological Society of America, 32nd Annual Meeting, Hotel Peabody, Memphis, Tenn., M. E. Merkl, Box 202, Leland, Miss., Secretary-Treasurer.

Dec. 2-6—Exposition of Chemical Industries, New York Coliseum.

Dec. 3-4—Iowa State College Fertilizer Manufacturer's Conference and Fertilizer Dealers' Short Course, Memorial Union, Iowa State College campus, Ames, Ia.

Dec. 4-5—Twelfth Annual Hybrid Corn Industry-Research Conference, La Salle Hotel, Chicago, Ill.

Dec. 4-6—Soil Science Society of Florida, Annual Meeting, Fertilizer Symposium on Dec. 5, University of Florida, Gainesville.

Dec. 5—Second Annual New Mexico Irrigation Exposition, Eastern New Mexico Fairgrounds, Roswell, N.M.; Al W. Woodburn and William Harr, c/o Southwest Public Service Co., Roswell, co-chairmen.

Dec. 6—Eighth Annual Fertilizer Dealers Short Course, South Dakota State College, Brookings, S.D.

Dec. 8-12—Vegetable Growers Association of America convention, Jung Hotel, New Orleans, La.

Dec. 9—Soils and Fertilizer Short Course, St. Paul Campus, University of Minnesota.

Dec. 9-12—Chemical Specialties Manufacturers Assn., Hollywood Beach Hotel, Hollywood, Fla.

Dec. 10-12 — North Central Weed Control Conference, 14th Annual Meeting, Hotel Savory, Des Moines, Iowa. Lyle A. Derscheid, agronomy department, South Dakota State College, Brookings, Program Chairman.

Dec. 11-13 — Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 12-13—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Tenn.

Dec. 18-19—Shell Nematology Workshop, Drayton Hall, University of South Carolina, Columbia, S.C.

Dec. 19-20—Missouri Soil Fertility Short Course, University of Missouri, Columbia, Mo.

1958

Jan. 7-8—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 8-10—Northeastern Weed Control Conference, Hotel New Yorker, New York, R. J. Aldrich, Rutgers University, New Brunswick, N.J., Secretary.

Jan. 9-10—Mississippi Insect Control Conference, State College, Miss.

Jan. 13-14—National Cotton Council of America, twentieth annual meeting, Westward Ho Hotel, Phoenix, Ariz.

Jan. 13-15, 1958—Weed Society of America and Southern Weed Conference, Joint meeting, Peabody Hotel, Memphis, Tenn.

Jan. 14-15—Georgia Plant Food Educational Society, Annual Meeting, University of Georgia, Athens, Ga., Fielding Reed, 710 Mortgage Guarantee Bldg., Atlanta, Ga., Secretary-Treasurer.

Jan. 14-16—Nebraska Fertilizer, Machinery and Chemical Exposition, Sponsored by the Nebraska Fertilizer Institute with the Nebraska College of Agriculture, Pershing Auditorium, Lincoln, Neb.

Jan. 20-21—Pest-O-Rama, sponsored by the Alabama Association for Control of Economic Pests, Coliseum, Montgomery, Ala., W. G. Eden, P.O. Box 626, Montgomery, Ala., Secretary-Treasurer.

Jan. 21-22—North Carolina Pesticide School, College Union Bldg., North Carolina State College, Raleigh.

Jan. 21-23—California Weed Conference, San Jose, Cal.

Jan. 22—Oregon Fertilizer Dealers Day, Oregon State College, Corvallis, Ore.

Jan. 22-23—Northwest Agricultural Chemicals Industry conference, Hotel Benson, Portland, Ore. (In connection with N.W. Vegetable Insect Conference and Western Cooperative Spray Project.)

Jan. 23-24—Illinois Custom Spray Operators School, University of Illinois, Urbana, Ill.

Jan. 30-31—Colorado Agricultural Chemicals Assn., Annual Meeting, Cosmopolitan Hotel, Denver.

Feb. 4-6—North Carolina Pest Control Operators' Short Course, College Union, Raleigh, N.C. Clyde F. Smith, Dept. of Entomology, N.C. State College, secretary.

Feb. 10-11 — Southwestern Branch, Entomological Society of America, annual meeting, Shamrock Hilton Hotel, Houston, Texas.

Feb. 13-14—Agronomists-Industry Joint Meeting, Edgewater Beach Hotel, Chicago, sponsored by the Middle West Soil Improvement Committee, Z. H. Beers, 228 N. LaSalle St., Chicago 1, Ill., Executive Secretary.

Feb. 20-22—Nitrogen Conference, University of Minnesota, St. Paul. M. W. Mawhinney, Smith-Douglass Co., Albert Lea, Minn., Chairman.

March 4-5—Western Cotton Production Conference, Hotel Cortez, El Paso, Texas, Conference Sponsored by the National Cotton Council and the Five State Cotton Growers Assn.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

AUCTION

Standard Chemical Company, Inc.

WED. DEC. 11 AT 10 A.M.

Rain or Shine You Set the Price

EASY TERMS

TROY, ALA., 3 miles N. E. on U. S. 29 and the Central of Georgia and Atlantic Coast Line Railroads, in the heart of Alabama's richest farm area 52 miles South of Montgomery.

General Fertilizer Plant Rated at 75,000 ton capacity

- Profitable History—Sales up to $2 million a year—plant has never had a mortgage on it.
- Everything ready to go—100-ton shipping capacity per hour.
- Valuable Goodwill—among both dealers and consumers.
- Plenty experienced, non-union labor.
- Modern sulphuric acid plant—new office—plenty of free water—20,000 ton storage capacity—R. R. Scales and many other features.

25% DOWN PAYMENT
Balance 15% a Year at 6% Interest

Everything For Profit

Good Dealer setup throughout 100-mile radius of a rich farm area, you get good will few firms anywhere enjoy. With a fleet of trucks, sell in a wider area. Sales have run up to $2,000,000. Capitalize on the trend toward more intense fertilization.

SULPHURIC ACID PLANT—Designed by experts in 1945. One man operates it. Storage capacity for 300 tons of sulphuric acid. 60-ton daily capacity. Acid reducing plant built in '48. Super phosphate manufacturing capacity of 900 tons a week. Automatic phosphate rock unloader handles a car per hour. Two silos hold 750 tons each of phosphate rock. Fertilizer building has storage capacity for 20,000 tons. Metal building with concrete floors for bags and supplies. Fully equipped machine shop is housed in brick building. Modern brick office with modern billing equipment completed last year. 100'x260' warehouse is sprinkled. Scales to weigh anything; also R. R. scales. FREE WATER—well pumps 500 gallons per minute. Two ground reservoirs with 100,000- and 250,000-gallon capacity plus an all metal water tank completed this year which holds 75,000 gallons. You set price on everything. Everything integrated and easy to manage. An unprecedented New South opportunity!

LONG LIST OF EQUIPMENT offered separately or as a whole. Brochure gives complete details and shows pictures. Call, wire or write now for your copy.

ON DISPLAY—See this sterling property now! See how it fits your needs and be at the sale.

J. L. TODD AUCTION CO.
303 W. THIRD STREET
ROME, GA. PHONE 4-1656
LICENSED - BONDED - INSURED

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $10 per column inch.

All Want Ads cash with order.

HELP WANTED

SALESMAN FOR NITROGEN PRODUCER. Excellent opportunity. Agronomy degree or equal. Age 25 to 40. Location Iowa, Missouri. Three to five years' experience selling to fertilizer manufacturers. Salary based on experience. Address Ad No. 3244, Croplife, Minneapolis 1, Minn.

BUSINESS OPPORTUNITIES

FOR SALE—ESTABLISHED AG. CHEMICAL distributing and formulating business in first class farming area in the mid-Ohio River Valley area. Address Ad No. 3265, Croplife, Minneapolis 1, Minn.

FOR FAST ACTION AND RESULTS try Croplife's CLASSIFIED ADVERTISING

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

Allied Chemical & Dye Corp., Nitrogen Division
American Potash & Chemical Corp.
Ashcraft-Wilkinson Co.
Anco Manufacturing & Supply Co.

Baughman Manufacturing Co., Inc.
Bemis Bro. Bag Co.
Blue, John, Co.
Bonneville, Ltd.
Bradley & Baker
Broyhill Company 8

Chase Bag Co. 8
Collier Carbon & Chemical Corp.
Commercial Solvents Corp.

Dallas Tank Mfg. Co.
Davison Chemical 7
Dow Chemical Co.
E. I. du Pont de Nemours & Co., Inc. 11
Duval Sulphur & Potash Co.

Flexo Products, Inc.

Gates Rubber Co.
Grace Chemical Co.

Harshaw Chemical Co.
Henderson Mfg. Co.
Hercules Powder Co.
Hough, Frank H., Co.

International Minerals & Chemical Corp. 17

Johns-Manville Corp. 13

Kent, Percy, Bag Co.
Kraft Bag Corp.

Merck & Co.
Meredith Publishing Co.
Meyer, Wilson & Geo., & Co.
Miller Publishing Co., The
Mississippi River Chemical Co.
Monsanto Chemical Co.

National Distillers & Chemical Corp.
National Potash Co.
Naugatuck Chemical Div., U. S. Rubber Co.
Nitrogen Div., Allied Chemical & Dye Corporation
Northwest Nitro-Chemicals, Ltd.

Olin Mathieson Chemical Corp.

Pacific Coast Borax Co.
Penick, S B., & Co.
Pennsalt of Washington Div. of Pennsalt Chemicals Corp.
Phillips Chemical Co.
Potash Company of America

Raymond Bag Co. 19

Shell Chemical Corp.
Sinclair Chemicals, Inc.
Smith-Rowland Co., Inc.
Sohio Chemical Co. 3
Southern Nitrogen Co.
Spencer Chemical Co.
Spraying Systems Co.
Stewart-Warner Corp.
Successful Farming

Tennessee Corp. 5
Todd, J. L., Auction Co. 23

Union Bag-Camp Paper Corp.
U. S. Industrial Chemicals, Inc.
U. S. Phosphoric Products Division 5
U. S. Potash Co.
U. S. Rubber Co., Naugatuck Chem. Div.
U. S. Steel Corp.

Velsicol Chemical Corp.

CROPLIFE's sharp, incisive reporting is studied every 7 days by the agricultural chemical industry . . .

CROPLIFE's spot diagnosis of the shifting agricultural chemical scene represents a powerful influence on this 2 billion dollar market . . .

NATIONAL COVERAGE WEEKLY . . .

Croplife's carefully controlled circulation provides national coverage weekly of manufacturers, formulators, mixers and ingredient suppliers.

PLUS REGIONAL COVERAGE BY MARKETING-AREAS . . .

In addition, a unique regional circulation plan provides advertisers with a selective marketing-area coverage of wholesale and retail dealers and farm advisory personnel.

WRITE—WIRE—PHONE our nearest office for a complete analysis of Croplife's important role in your advertising program.

In addition to its national coverage, Croplife offers a selective regional circulation plan in these marketing-areas

Here is a COMPLETE advertising medium with COMPLETE coverage of the market . . .

Croplife . . . for richer sales fields

New York, 551 Fifth Ave.
Murray Hill 2-2185

Minneapolis, 2501 Wayzata Boulevard
Federal 2-0575

NBP *Member of National Business Publications*

BPA *Member of Business Publications Audit*

Chicago, 2272 Board of Trade Bldg.
Harrison 7-6782

Kansas City, 612 Board of Trade Bldg.
Victor 2-1350